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12AP1/F5 -- Viventia Biotech 1964 -- Aventis 20K growth hormone -- AMUR 28P6/E6 -- Viventia Biotech 3-Hydroxyphthaloyl-beta-lactoglobulin -4-IBB ligand gene therapy -64-Cu MAb conjugate TETA-1A3 --Mallinckrodt Institute of Radiology 64-Cu MAb conjugate TETA-cT84.66 64-Cu Trastuzumab TETA conjugate -Genentech A 200 -- Amgen A10255 - Eli Liliv A1PDX - Hedral THerapeutics A6 -- Anastrom aaAT-III -- Genzvme Abciximab -- Centocor ABI.001 - Atlantic BioPharmaceuticals ABT-828 - Abbott Accutin Actinohivin activin -- Biotech Australia, Human Therapeutics activin -- Curls AD 439 - Tanox AD 519 - Tanox Adalimumab -- Cambridge Antibody Tech. Adenocarcinoma vaccine - Biomira - NIS Adenosine A2B receptor antagonists --Adenosine Therapeutics ADP-001 - Axis Genetics AF 13948 - Affymax Afelimomab – Knoll AFP-SCAN - Immunomedics AG 2195 - Corixa agalsidase alfa -- Transkaryotic Therapies agalsidase beta -- Genzyme AGENT-Antisoma AI 300 - AutoImmune AI-101 - Teva

Al-102 - Teva

Al-201 - AutoImmune Al-301 - Autolmmune AIDS vaccine - ANRS, CIBG, Hesed Biomed, Hollis-Eden, Rome, United Biomedical, American Home Products, Maxvgen airway receptor ligand -- IC Innovations - AJvW 2 -- Ajinomoto AK 30 NGF -- Alkermes Albuferon - Human Genome Sciences albumin - Biogen, DSM Anti-Infectives, Genzyme Transgenics, PPL Therapeutics, TranXenoGen, Welfide Corp. aldesleukin - Chiron alefacept -- Biogen Alemtuzumab -Allergy therapy -- ALK-Abello/Maxygen, Al K-Abello/RP Scherer allergy vaccines -- Allergy Therapeutics Alnidofibatide -- Aventis Pasteur Alnorine -- SRC VB VECTOR ALP 242 -- Gruenenthal Alpha antitrypsin -- Arriva/Hyland Immuno/ProMetic/Protease Sciences Alpha-1 antitrypsin - Cutter, Bayer, PPL Therapeutics, Profile, ZymoGenetics, Arriva Alpha-1 protease inhibitor -- Genzyme Transgenics, Welfide Corp. Alpha-galactose fusion protein -**Immunomedics** Alpha-galactosidase A -- Research Corporation Technologies Alpha-glucosidase - Genzyme, Novazyme Alpha-lactalbumin Alpha-L-iduronidase - Transkaryotic Therapies, BioMarin alteplase -- Genentech alvircept sudotox -- NIH ALX1-11 -sNPS Pharmaceuticals Alzheimer's disease gene therapy -

# FIG. 1A

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Anti-B4 MAb-DC1 conjugate - ImmunoGen AM-133 -- AMRAD Anti-B7 antibody PRIMATIZED -- IDEC Amb a 1 immunostim conj. - Dynavax Anti-B7-1 MAb 16-10A1 AMD 3100 - AnorMED -- NIS Anti-B7-1 MAb 1G10 AMD 3465 - AnorMED -- NIS Anti-B7-2 MAb GL-1 AMD 3465 - AnorMED -- NIS Anti-B7-2-gelonin immunotoxin -AMD Fab -- Genentech Antibacterials/antifungals --Amediplase - Menarini, Novartis Diversa/IntraBiotics AM-F9 Anti-beta-amyloid monoclonal antibodies --Amoebiasis vaccine Cambridge Antibody Tech., Wyeth-Averst Amphiregulin -- Octagene Anti-BLvS antibodies -- Cambridge anakinra - Amgen Antibody Tech. /Human Genome Sciences analgesic -- Nobex Antibody-drug conjugates - Seattle ancestim -- Amgen Genetics/Eos AnergiX.RA - Corixa, Organon Anti-C5 MAb BB5-1 -- Alexion Angiocidin - InKine Anti-C5 MAb N19-8 -- Alexion angiogenesis inhibitors -- ILEX Anti-C8 MAb AngioMab - Antisoma anticancer cytokines - BioPulse Angiopoietins -- Regeneron/Procter & anticancer matrix - Telios Integra Gamble Anticancer monoclonal antibodies - ARIUS, angiostatin -- EntreMed Angiostatin/endostatin gene therapy -Immunex anticancer peptides - Maxygen, Micrologix Genetix Pharmaceuticals Anticancer prodrug Tech. -- Alexion angiotensin-II, topical -- Maret Anthrax -- EluSvs Therapeutics/US Army Antibody Technologies anticancer Troy-Bodies -- Affite -- Affitech Medical Research Institute anticancer vaccine -- NIH Anthrax vaccine Anti platelet-derived growth factor D human anticancers - Epimmune Anti-CCR5/CXCR4 sheep MAb -- KS monoclonal antibodies -- CuraGen Biomedix Holdings Anti-17-1A MAb 3622W94 --Anti-CD11a MAb KBA -GlaxoSmithKline Anti-CD11a MAb M17 Anti-2C4 MAb -- Genentech anti-4-1BB monoclonal antibodies -- Bristol- Anti-CD11a MAb TA-3:-Anti-CD11a MAb WT.1 -Myers Squibb Anti-CD11b MAb -- Pharmacia Anti-Adhesion Platform Tech. -- Cytovax Anti-adipocyte MAb -- Cambridge Antibody Anti-CD11b MAb LM2 Anti-CD154 MAb - Biogen Tech./ObeSys Anti-CD16-anti-CD30 MAb - Biotest antiallergics -- Maxygen Anti-CD18 MAb -- Pharmacia antiallergy vaccine - Acambis Anti-CD19 MAb B43 -Anti-alpha-4-integrin MAb Anti-angiogenesis monocional antibodies -- Anti-CD19 MAb -liposomal sodium butyrate conjugate -KS Biomedix/Schering AG

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Anti-CD4 MAb GK1-5

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Anti-CD4 MAb KT6 Anti-CD19 MAb-saporin conjugate -Anti-CD19-dsFv-PE38-immunotoxin -Anti-CD4 MAb OX38 Anti-CD4 MAb PAP conjugate -- Bristol-Anti-CD2 MAb 12-15 -Myers Squibb Anti-CD2 MAb B-E2 -- Diaclone Anti-CD4 MAb RIB 5-2 Anti-CD2 MAb OX34 --Anti-CD4 MAb W3/25 Anti-CD2 MAb OX54 -Anti-CD4 MAb YTA 3.1.2 Anti-CD2 MAb OX55 -Anti-CD4 MAb YTS 177-9 Anti-CD2 MAb RM2-1 Anti-CD40 ligand MAb 5c8 -- Biogen Anti-CD2 MAb RM2-2 Anti-CD40 MAb Anti-CD2 MAb RM2-4 Anti-CD40 MAb 5D12 - Tanox Anti-CD20 MAb BCA B20 Anti-CD20-anti-Fc alpha RI bispecific MAb -Anti-CD44 MAb A3D8 Anti-CD44 MAb GKWA3 Medarex, Tenovus Anti-CD44 MAb IM7 Anti-CD22 MAb-saporin-6 complex -Anti-CD44 MAb KM81 Anti-CD3 immunotoxin -Anti-CD44 variant monoclonal antibodies --Anti-CD3 MAb 145-2C11 -- Pharming Corixa/Hebrew University Anti-CD3 MAb CD4lgG conjugate --Anti-CD45 MAb BC8-I-131 Genentech Anti-CD3 MAb humanised - Protein Design, Anti-CD45RB MAb Anti-CD48 MAb HuLv-m3 RW Johnson Anti-CD48 MAb WM-63 Anti-CD3 MAb WT32 Anti-CD5 MAb -- Becton Dickinson Anti-CD3 MAb-ricin-chain-A conjugate -Anti-CD3 MAb-xanthine-oxidase conjugate Anti-CD5 MAb OX19 Anti-CD6 MAb Anti-CD7 MAb-PAP conjugate Anti-CD30 MAb BerH2 -- Medac Anti-CD7 MAb-ricin-chain-A conjugate Anti-CD30 MAb-saporin conjugate Anti-CD8 MAb - Amerimmune, Cytodyn, Anti-CD30-scFv-ETA'-immunotoxin Becton Dickinson Anti-CD38 MAb AT13/5 Anti-CD8 MAb 2-43 Anti-CD38 MAb-saporin conjugate Anti-CD8 MAb OX8 Anti-CD3-anti-CD19 bispecific MAb Anti-CD80 MAb P16C10 -- IDEC Anti-CD3-anti-EGFR MAb Anti-CD80 MAb P7C10 - ID Vaccine Anti-CD3-anti-interleukin-2-receptor MAb Anti-CD8-idarubicin conjugate Anti-CD3-anti-MOv18 MAb -- Centocor Anti-CEA MAb CE-25 Anti-CD3-anti-SCLC bispecific MAb Anti-CEA MAb MN 14 - Immunomedics Anti-CD4 idiotype vaccine Anti-CEA MAb MN14-PE40 conjugate -Anti-CD4 MAb - Centocor, IDEC **Immunomedics** Pharmaceuticals, Xenova Group Anti-CEA MAb T84.66-interleukin-2 Anti-CD4 MAb 16H5 Anti-CD4 MAb 4162W94 -- GlaxoSmithKline conjugate Anti-CEA sheep MAb -- KS Biomedix Anti-CD4 MAb B-F5 -- Diaclone

Holdings

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Anti-HIV antibody - Epicyte Anti-cell surface monoclonal antibodies -anti-HIV catalytic antibody - Hesed Biomed Cambridge Antibody Tech. /Pharmacia Anti-c-erbB2-anti-CD3 bifunctional MAb anti-HIV fusion protein - Idun anti-HIV proteins -- Cangene Otsuka Anti-HM1-24 MAb -- Chugai Anti-CMV MAb - Scotgen Anti-hR3 MAb Anti-CTLA-4 MAb Anti-Human-Carcinoma-Antigen MAb --Anti-EGFR catalytic antibody -- Hesed Epicyte Biomed Anti-ICAM-1 MAb -- Boehringer Ingelheim anti-FGFR immunotoxin -- IVAX Anti-ICAM-1 MAb 1A-29 -- Pharmacia Anti-EGFR MAb -- Abgenix Anti-ICAM-1 MAb HA58 Anti-EGFR MAb 528 Anti-ICAM-1 MAb YN1/1.7.4 Anti-EGFR MAb KSB 107 - KS Biomedix Anti-ICAM-3 MAb ICM3 -- ICOS Anti-EGFR MAb-DM1 conjugate --Anti-idiotype breast cancer vaccine 11D10 ImmunoGen Anti-idiotype breast cancer vaccine Anti-EGFR MAb-LA1 -ACA14C5 -Anti-EGFR sheep MAb -- KS Biomedix Anti-idiotype cancer vaccine -- ImClone Anti-FAP MAb F19-I-131 Systems/Merck KGaA ImClone, Viventia Anti-Fas IgM MAb CH11 Biotech Anti-Fas MAb Jo2 Anti-idiotype cancer vaccine 1A7 -- Titan Anti-Fas MAb RK-8 Anti-Flt-1 monoclonal antibodies - ImClone Anti-idiotype cancer vaccine 3H1 - Titan Anti-idiotype cancer vaccine TriAb -- Titan Anti-fungal peptides -- State University of Anti-idiotype Chlamydia trachomatis New York vaccine antifungal tripeptides -- BTG Anti-ganglioside GD2 antibody-interleukin-2 Anti-idiotype colorectal cancer vaccine --Novartis fusion protein -- Lexigen Anti-idiotype colorectal cancer vaccine --Anti-GM2 MAb -- Kyowa Anti-GM-CSF receptor monoclonal Onvvax Anti-idiotype melanoma vaccine - IDEC antibodies -- AMRAD Anti-gp130 MAb -- Tosoh Pharmaceuticals 3 3 2 Anti-idiotype ovarian cancer vaccine ACA Anti-HCA monoclonal antibodies --AltaRex/Epigen Anti-idiotype ovarian cancer vaccine AR54 -Anti-hCG antibodies -- Abgenix/AVI AltaRex BioPharma Anti-idiotype ovarian cancer vaccine CA-Anti-heparanase human monoclonal 125 – AltaRex. Biomira antibodies -- Oxford Anti-IgE catalytic antibody -- Hesed Biomed Glycosciences/Medarex Anti-IgE MAb E26 -- Genentech Anti-hepatitis C virus human monoclonal antibodies -- XTL Biopharmaceuticals Anti-IGF-1 MAb anti-inflammatory - GeneMax Anti-HER-2 antibody gene therapy anti-inflammatory peptide -- BTG Anti-herpes antibody -- Epicyte

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Anti-mu MAb -- Novartis anti-integrin peptides -- Burnha Anti-interferon-alpha-receptor MAb 64G12 -- Anti-MUC-1 MAb Anti-Nogo-A MAb IN1 Pharma Pacific Management Anti-nuclear autoantibodies - Procyon Anti-interferon-gamma MAb -- Protein Anti-ovarian cancer monoclonal antibodies -Design Labs Anti-interferon-gamma polyclonal antibody - - Dompe Anti-p185 monoclonal antibodies - Advanced Biotherapy Anti-p43 MAb Anti-interleukin-10 MAb -Antiparasitic vaccines Anti-interleukin-12 MAb -Anti-interleukin-1-beta polyclonal antibody -- Anti-PDGF/bFGF sheep MAb -- KS Biomedix R&D Systems Anti-properdin monoclonal antibodies ---Anti-interleukin-2 receptor MAb 2A3 Abgenix/Gliatech Anti-interleukin-2 receptor MAb 33B3-1 --Anti-PSMA MAb J591 -- BZL Biologics Immunotech Anti-Rev MAb gene therapy -Anti-interleukin-2 receptor MAb ART-18 Anti-RSV antibodies - Epicyte, Intracell Anti-interleukin-2 receptor MAb LO-Tact-1 Anti-RSV monoclonal antibodies --Anti-interleukin-2 receptor MAb Mikbeta1 Medarex/Medimmune, Applied Molecular Anti-interleukin-2 receptor MAb NDS61 Evolution/MedImmune Anti-interleukin-4 MAb 11B11 Anti-RSV MAb, inhalation -Anti-interleukin-5 MAb -- Wallace Alkermes/Medimmune Laboratories Anti-RT gene therapy Anti-interleukin-6 MAb - Centocor, Antisense K-ras RNA gene therapy Diaclone, Pharmadigm Anti-SF-25 MAb Anti-interleukin-8 MAb - Xenotech Anti-sperm antibody -- Epicyte Anti-.II 1 MAb Anti-Tac(Fv)-PE38 conjugate Anti-Klebsiella sheep MAb -- KS Biomedix Anti-TAPA/CD81 MAb AMP1 Holdings Anti-tat gene therapy Anti-Laminin receptor MAb-liposomal Anti-TCR-alphabeta MAb H57-597 doxorubicin conjugate Anti-TCR-alphabeta MAb R73 Anti-LCG MAb -- Cytoclonal Anti-tenascin MAb BC-4-1-131 Anti-lipopolysaccharide MAb -- VitaResc Anti-TGF-beta human monoclonal Anti-L-selectin monoclonal antibodies -antibodies - Cambridge Antibody Tech., Protein Design Labs, Abgenix, Stanford Genzyme University Anti-TGF-beta MAb 2G7 -- Genentech Anti-MBL monoclonal antibodies --Antithrombin III -- Genzyme Transgenics, Alexion/Brigham and Women's Hospital Aventis, Bayer, Behringwerke, CSL, Anti-MHC monoclonal antibodies Anti-MIF antibody humanised - IDEC, Myriad Anti-Thy1 MAb Cytokine PharmaSciences Anti-Thy1.1 MAb Anti-MRSA/VRSA sheep MAb -- KS Biomedix Holdings

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Anti-tissue factor/factor VIIA sheep MAb -- ARGENT gene delivery systems -- ARIAD KS Biomedix Arresten Anti-TNF monoclonal antibodies -ART-123 -- Asahi Kasei arylsulfatase B -- BioMarin Centocor, Chiron, Peptech, Pharacia, Arylsulfatase B, Recombinant human --Serono Anti-TNF sheep MAb - KS Biomedix BioMarin AS 1051 -- Aiinomoto Holdings ASI-BCL -- Intracell Anti-TNFalpha MAb - Genzyme Anti-TNFalpha MAb B-C7 -- Diaclone ATL-101 - Alizyme atrial natriuretic peptide - Pharis Anti-tooth decay MAb -- Planet BioTech. Aurintricarboxylic acid-high molecular antitumour RNases -- NIH Anti-VCAM MAb 2A2 -- Alexion weight autoimmune disorders -- GPC Anti-VCAM MAb 3F4 -- Alexion Biotech/MorphoSys Anti-VCAM-1 MAb Autoimmune disorders and transplant Anti-VEC MAb -- ImClone rejection -- Bristol-Myers Squibb/Genzyme Anti-VEGF MAb -- Genentech Anti-VEGF MAb 2C3 Tra Autoimmune disorders/cancer --Anti-VEGF sheep MAb -- KS Biomedix Abgenix/Chiron, /CuraGen Holdings Autotaxin Anti-VLA-4 MAb HP1/2 -- Biogen Avicidin -- NeoRx Anti-VLA-4 MAb PS/2 axogenesis factor-1 - Boston Life Sciences Anti-VLA-4 MAb R1-2 Axokine -- Regeneron Anti-VLA-4 MAb TA-2 Anti-VRE sheep MAb -- KS Biomedix B cell lymphoma vaccine -- Biomira B7-1 gene therapy -Holdings BABS proteins -- Chiron ANUP -- TranXenoGen BAM-002 - Novelos Therapeutics ANUP-1 -- Pharis AOP-RANTES -- Senetek Bav-16-9996 -- Bayer Apan-CH -- Praecis Pharmaceuticals Bay-39-9437 -- Bayer Bay-50-4798 -- Bayer APC-8024 -- Demegen ApoA-1 -- Milano, Pharmacia BB-10153 -- British Biotech BBT-001 - Bolder BioTech. Apogen -- Alexion BBT-002 -- Bolder BioTech. apolipoprotein A1 -- Avanir BBT-003 -- Bolder BioTech. Apolipoprotein E -- Bio-Tech. General BBT-004 -- Bolder BioTech. Applaggin -- Biogen BBT-005 -- Bolder BioTech. aprotinin -- ProdiGene BBT-006 -- Bolder BioTech. APT-070C -- AdProTech BBT-007 -- Bolder BioTech. AR 177 -- Aronex Pharmaceuticals AR 209 -- Aronex Pharmaceuticals, BCH-2763 -- Shire BCSF - Millenium Biologix Antigenics BDNF - Regeneron - Amgen AR545C

FIG. 1F

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Becaplermin - Johnson & Johnson, Chiron BST-3002 - BioStratum Bectumomab - Immunomedics BTI 322 butvrvicholinesterase -- Shire Beta-adrenergic receptor gene therapy --C 6822 -- COR Therapeutics University of Arkansas Bi 51013 -- Behringwerke AG C1 esterase inhibitor -- Pharming C3d adiuvant -- AdProTech BIBH 1 - Boehringer Ingelheim CAB-2.1 -- Millennium BIM-23190 -- Beaufour-lpsen calcitonin - Inhale Therapeutics Systems, birch pollen immunotherapy -- Pharmacia bispecific fusion proteins -- N1H Aventis, Genetronics, TranXenoGen, Unigene, Rhone Poulenc Rohrer Bispecific MAb 2B1 -- Chiron Bitistatin calcitonin - oral - Nobex, Emisphere, BIWA 4 - Boehringer Ingelheim Pharmaceutical Discovery Calcitonin gene-related peptide -- Asahi blood substitute - Northfield, Baxter Intl. Kasei -- Unigene BLP-25 -- Biomira BLS-0597 -- Boston Life Sciences calcitonin, human -- Suntory BLvS -- Human Genome Sciences calcitonin, nasal - Novartis, Unigene BLvS radiolabelled -- Human Genome calcitonin, Panoderm -- Elan Sciences calcitonin, Peptitrol -- Shire calcitonin, salmon -- Therapicon BM 06021 --- Boehringer Mannheim BM-202 -- BioMarin calin -- Biopharm Calphobindin I BM-301 -- BioMarin BM-301 -- BioMarin calphobindin I -- Kowa calreticulin -- NYU BM-302 -- BioMarin BMP 2 - Genetics Institute/Medtronic-Campath-1G Sofamor Danek, Genetics Institute/ Campath-1M Collagenesis, Genetics cancer therapy -- Cangene cancer vaccine - Aixlie, Aventis Pasteur, Institute/Yamanouch Center of Molecular Immunology, YM BMP 2 gene therapy BMP 52 - Aventis Pasteur, Biopharm BioSciences, Cytos, Genzyme, BMP-2 -- Genetics Institute Transgenics, Globelmmune, Igeneon, BMS 182248 -- Bristol-Myers Squibb ImClone, Virogenetics, InterCell, Iomai, BMS 202448 -- Bristol-Myers Squibb Jenner Biotherapies, Memorial Sloan-Kettering Cancer Center, Sydney Kimmel bone growth factors -- IsoTis BPC-15 -- Pfizer Cancer Center, Novavax, Protein Sciences, Argonex, SIGA brain natriuretic peptide -Cancer vaccine ALVAC-CEA B7.1 --Breast cancer -- Oxford GlycoSciences/Medarex Avents Pasteur/Therion Biologics Breast cancer vaccine -- Therion Biologics, Cancer vaccine CEA-TRICOM -- Aventis Pasteur/Therion Biologics Oregon BSSL -- PPL Therapeutics Cancer vaccine gene therapy -- Cantab BST-2001 - BioStratum Pharmaceuticals 2 4 1

## FIG. 1G

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Cancer vaccine HER-2/neu -- Corixa CETP vaccine -- Avant Cancer vaccine THERATOPE -- Biomira Cetrorelix cancer vaccine, PolyMASC -- Valentis Cetuximab Candida vaccine - Corixa, Inhibitex CGH 400 -- Novartis CGP 42934 - Novartis Canstatin -- ILEX CGP 51901 - Tanox CAP-18 -- Panorama Cardiovascular gene therapy -- Collateral CGRP -- Unigene CGS 27913 -- Novartis Therapeutics CGS 32359 -- Novartis carperitide -- Suntory Chagas disease vaccine -- Corixa Casocidin-1 -- Pharis CAT 152 -- Cambridge Antibody Tech. chemokines -- Immune Response CHH 380 -- Novartis CAT 192 -- Cambridge Antibody Tech. chitinase - Genzyme, ICOS CAT 213 - Cambridge Antibody Tech. Chlamydia pneumoniae vaccine -- Antex Catalase -- Enzon Biologics Cat-PAD -- Circassia Chlamydia trachomatis vaccine -- Antex CB 0006 -- Celltech **Biologics** CCK(27-32)-- Akzo Nobel Chlamydia vaccine - GlaxoSmithKline CCR2-641 -- NIH Cholera vaccine CVD 103-HgR -- Swiss CD, Procept -- Paligent Serum and Vaccine Institute Berne CD154 gene therapy Cholera vaccine CVD 112 -- Swiss Serum CD39 -- Immunex and Vaccine Institute Berne CD39-L2 -- Hvseq Cholera vaccine inactivated oral -- SBL CD39-L4 -- Hvsea CD4 fusion toxin - Senetek Vaccin Chrysalin - Chrysalis BioTech. CD4 lgG -- Genentech CI-782 -- Hitachi Kase CD4 receptor antagonists ---Ciliary neurotrophic factor - Fidia, Roche Pharmacopeia/Progenics CIM project -- Active Biotech CD4 soluble -- Progenics CL 329753 -- Wyeth-Ayerst CD4, soluble -- Genzyme Transgenics CL22, Cobra -- ML Laboratories CD40 ligand -- Immunex CD4-ricin chain A -- Genentech Clenoliximab -- IDEC Clostridium difficile antibodies -- Epicyte CD59 gene therapy -- Alexion clotting factors -- Octagene CD8 TIL cell therapy -- Aventis Pasteur CD8, soluble -- Avidex CMB 401 -- Celltech CNTF -- Sigma-Tau CD95 ligand -- Roche Cocaine abuse vaccine - Cantab, CDP 571 -- Celltech CDP 850 - Celltech ImmuLogic, Scripps coccidiomycosis vaccine -- Arizo CDP 870 -- Celltech collagen -- Type I -- Pharming CDS-1 -- Ernest Orlando Collagen formation inhibitors -- FibroGen Cedelizumab -- Ortho-McNeil Cetermin -- Insmed

FIG. 1H

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Collagen/hydroxyapatite/bone growth factor CY 1747 -- Epimmune CY 1748 -- Epimmune -- Aventis Pasteur, Biopharm, Orquest Cyanovirin-N collagenase -- BioSpecifics Colorectal cancer vaccine - Wistar Institute Cystic fibrosis therapy -- CBR/IVAX Component B, Recombinant -- Serono CYT 351 Connective tissue growth factor inhibitors -- cytokine Traps -- Regeneron cytokines - Enzon, Cytoclonal FibroGen/Taisho Cytomegalovirus glycoprotein vaccine -Contortrostatin Chiron, Aguila Biopharmaceuticals, contraceptive vaccine -- Zonagen Contraceptive vaccine hCG Aventis Pasteur, Virogenetics Cytomegalovirus vaccine live -- Aventis Contraceptive vaccine male reversible --Pasteur IMMUCON Cytosine deaminase gene therapy --Contraceptive vaccine zona pellucida --GlaxoSmithKline Zonagen DA-3003 -- Dong-A Copper-64 labelled MAb TETA-1A3 -- NCI DAB389interleukin-6 -- Senetek Coraivne DAB389interleukin-7 Corsevin M DAMP^ -- Incyte Genomics C-peptide analogues -- Schwarz Daniplestim - Pharmacia CPI-1500 -- Consensus darbepoetin alfa -- Amgen CRF -- Neurobiological Tech. DBI-3019 -- Diabetogen cRGDfV pentapeptide – CRL 1095 -- CytRx DCC -- Genzyme DDF -- Hyseq CRL 1336 -- CvtRx decorin -- Integra, Telios CRL 1605 -- CytRx defensins -- Large Scale Biology CS-560 - Sankyo DEGR-VIIa CSF -- ZvmoGenetics Delmmunised antibody 3B6/22 AGEN CSF-G - Hangzhou, Dong-A, Hanmi Deimmunised anti-cancer antibodies --CSF-GM - Cangene, Hunan, LG Chem Biovation/Viragen CSF-M -- Zarix CT 1579 - Merck Frosst Dendroamide A Dengue vaccine -- Bavarian Nordic, Merck CT 1786 - Merck Frosst denileukin diftitox -- Ligand CT-112<sup>^</sup> -- BTG DES-1101 - Desmos CTB-134L - Xenova desirudin -- Novartis CTC-111 -- Kaketsuken desmopressin -- Unigene CTGF -- FibroGen Desmoteplase - Merck, Schering AG CTLA4-la -- Bristol-Myers Squibb Destabilase CTLA4-Ig gene therapy --Diabetes gene therapy - DeveloGen, Pfizer CTP-37 -- AVI BioPharma Diabetes therapy -- Crucell C-type natriuretic peptide -- Suntory Diabetes type 1 vaccine -- Diamyd CVS 995 - Corvas Intl. Therapeutics CX 397 - Nikko Kyodo

FIG. 11

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EGF-P64k vaccine -- Center of Molecular DiaCIM -- YM BioSciences dialytic oligopeptides - Research Corp **Immunology** Diamvd - Diamvd Therapeutics EL 246 -- LigoCyte DiaPep227-- Pepgen elastase inhibitor -- Synergen elcatonin --- Therapicon DiavaX – Corixa Diphtheria tetanus pertussis-hepatitis B EMD 72000 - Merck KGaA vaccine -- GlaxoSmithKline Emdogain -- BIORA emfilermin -- AMRAD DIR therapy -- Solis Therapeutics --Emoctakin -- Novartis DNase -- Genentech Dornase alfa -- Genentech enamel matrix protein -- BIORA Dornase alfa, inhalation -- Genentech Endo III -- NYU endostatin – EntreMed. Pharis Doxorubicin-anti-CEA MAb conjugate — Enhancins -- Micrologix Immunomedics DP-107 -- Trimeris Fnlimomab -- Isls Pharm. Enoxaparin sodium -- Pharmuka drotrecogin alfa -- Eli Lilly enzyme linked antibody nutrient depletion DTctGMCSF DTP-polio vaccine -- Aventis Pasteur therapy -- KS Biomedix Holdings DU 257-KM231 antibody conjugate --Eosinophil-derived neutralizing agent -EP-51216 -- Asta Medica Kvowa EP-51389 -- Asta Medica dural graft matrix - Integra EPH family ligands - Regeneron Duteplase – Baxter Intl. Epidermal growth factor -- Hitachi Kasei, DWP-401 -- Daewoong Johnson & Johnson DWP-404 -- Daewoong DWP-408 -- Daewoong Epidermal growth factor fusion toxin --E coli O157 vaccine - NiH Senetek Epidermal growth factor-genistein -E21-R -- BresaGen Eastern equine encephalitis virus vaccine - EPI-HNE-4 - Dyax EPI-KAL2 – Dvax Echicetin -Echinhibin 1 -Epoetin-alfa - Amgen, Dragon Pharmaceuticals, Nanjing Huaxin Echistatin -- Merck Fchitamine -Epratuzumab – Immunomedics EC-SOD -- PPL Therapeutics Epstein-Barr virus vaccine --EDF -- Alinomoto Eptacog alfa -- Novo Nordisk EDN derivative -- NIH Eptifibatide -- COR Therapeutics EDNA -- NIH Edobacomab -- XOMA erb-38 -Erlizumab -- Genentech Edrecolomab -- Centocor FF 5077

Efalizumab -- Genentech EGF fusion toxin - Seragen, Ligand Aviron/SmithKline Beecham, Bioresearch

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erythropoietin -- Alkermes, ProLease, Dong-Fas TR -- Human Genome Sciences Felvizumab - Scotgen A. Elanex. Genetics Institute, LG Chem. FFR-VIIa -- Novo Nordisk Protein Sciences, Serono, Snow Brand, FG-001 -- F-Gene SRC VB VECTOR, Transkaryotic FG-002 - F-Gene Therapies Erythropoietin Beta -- Hoffman La Roche FG-004 - F-Gene FG-005 - F-Gene Erythropoietin/Epoetin alfa -- Chugai FGF + fibrin -- Repair Escherichia coli vaccine -- North American Fibrimage -- Bio-Tech. General Vaccine, SBL Vaccin, Swiss Serum and fibrin-binding peptides - ISIS Innovation Vaccine Institute Berne fibrinogen -- PPL Therapeutics, Pharming etanercept -- Immunex fibroblast growth factor - Chiron, NYU, examorelin - Mediolanum Ramot, ZymoGenetics exonuclease VII fibrolase conjugate -- Schering AG F 105 -- Centocor Filgrastim -- Amgen F-992 -- Fomix filgrastim - PDA modified -- Xencor Factor IX - Alpha Therapeutics, Welfide Corp., CSL, enetics Institute/AHP, FLT-3 ligand -- Immunex Pharmacia, PPL Therapeutics FN18 CRM9 -Factor IX gene therapy -- Cell Genesys follistatin - Biotech Australia, Human Factor VII - Novo Nordisk, Bayer, Baxter Therapeutics follitropin alfa - Alkermes, ProLease, Intl. PowderJect, Serono, Akzo Nobel Factor VIIa - PPL Therapeutics, Follitropin Beta - Bayer, Organon ZymoGenetics Factor VIII - Bayer Genentech, Beaufour-FP 59 Ipsen, CLB, Inex, Octagen, Pharmacia, FSH -- Ferring FSH + LH -- Ferring Pharming Factor VIII -- PEGylated -- Bayer F-spondin -- CeNeS Factor VIII fragments -- Pharmacia fusion protein delivery system -- UAB Factor VIII gene therapy - Targeted Research Foundation fusion toxins - Boston Life Sciences Genetics Factor VIII sucrose formulation - Bayer, G 5598 -- Genentech GA-II - Transkaryotic Therapies Genentech Gamma-interferon analogues - SRC VB Factor VIII-2 -- Bayer VECTOR Factor VIII-3 - Bayer Factor Xa inhibitors - Merck, Novo Nordisk, Ganirelix -- Roche gastric lipase -- Meristem Mochida Factor XIII -- ZymoGenetics Gavilimomab – Factors VIII and IX gene therapy -- Genetics G-CSF - Amgen, SRC VB VECTOR GDF-1 -- CeNeS Institute/Targeted Genetics GDF-5 - Biopharm Famoxin -- Genset GDNF -- Amgen Fas (delta) TM protein - LXR BioTech.

FIG. 1K

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FIG. 1

gelsolin -- Biogen Gemtuzumab ozogamicin -- Celltech Gene-activated epoetin-alfa -- Aventis Pharma -- Transkarvotic Therapies Glanzmann thrombasthenia gene therapy -Glatiramer acetate -- Yeda glial growth factor 2 -- CeNeS GLP-1 - Amylin, Suntory, TheraTech, Watson GLP-1 peptide analogues – Zealand Pharaceuticals 4 1 glucagon -- Eli Lilly, ZymoGenetics Glucagon-like peptide-1 7-36 amide --Suntory Glucocerebrosidase -- Genzyme giutamate decarboxylase -- Genzyme Transgenics Glycoprotein S3 -- Kureha GM-CSF -- Immunex GM-CSF tumour vaccine -- PowderJect GnRH immunotherapeutic -- Protherics ap75 antigen -- ImClone ap96 -- Antigenics GPI 0100 -- Galenica GR 4991W93 -- GlaxoSmithKline Granulocyte colony-stimulating factor --Dong-A Granulocyte colony-stimulating factor conjugate grass allergy therapy -- Dynavax GRF1-44 -- ICN Growth Factor - Chiron, Atrigel, Atrix, Innogenetics, ZymoGenetics, Novo growth factor peptides -- Biotherapeutics growth hormone - LG Chem growth hormone, Recombinant human --GT 4086 -- Gliatech GW 353430 -- GlaxoSmithKline GW-278884 -- GlaxoSmithKline H 11 -- Viventia Biotech

Sciences haemoglobin -- Biopure haemoglobin 3011, Recombinant -- Baxter Healthcare haemoglobin crosfumaril – Baxter Intl. haemoglobin stabilized -- Ajinomoto haemoglobin, recombinant -- Apex HAF -- Immune Response Hantavirus vaccine HB 19 HBNF -- Regeneron HCC-1 -- Pharis hCG -- Milkhaus hCG vaccine -- Zonagen HE-317 -- Hollis-Eden Pharmaceuticals Heat shock protein cancer and influenza vaccines -- StressGen Helicobacter pylori vaccine -- Acambis, AstraZeneca/CSL, Chiron, Provalis Helistat-G -- GalaGen Hemolink -- Hemosol hepapoietin -- Snow Brand heparanase -- InSight heparinase I -- Ibex heparinase III - Ibex Hepatitis A vaccine -- American Biogenetic Sciences Hepatitis A vaccine inactivated Hepatitis A vaccine Nothav -- Chiron Hepatitis A-hepatitis B vaccine --GlaxoSmithKline hepatitis B therapy -- Tripep Hepatitis B vaccine - Amgen, Chiron SpA, Meiji Milk, NIS, Prodeva, PowderJect, Rhein Biotech Hepatitis B vaccine recombinant -- Evans Vaccines, Epitec Comblotech, Genentech, Medlmmune, Merck Sharp & Dohme, Rhein Biotech, Shantha Biotechnics, Vector, Yeda

H5N1 influenza A virus vaccine - Protein

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Hepatitis B vaccine recombinant TGP 943 -- HIV peptides -- American Home Products HIV vaccine - Applied bioTech., Axis Takeda Hepatitis C vaccine -- Bavarian Nordic. Genetics, Biogen, Bristol-Myers Squibb, Chiron, Innogenetics Acambis. Genentech, Korea Green Cross, NIS, Oncogen, Protein Sciences Corporation, Henatitis D vaccine -- Chiron Vaccines Terumo, Tonen Corporation, Wyeth-Hepatitis E vaccine recombinant --Averst, Wyeth-Lederle Vaccines-Malvern, Genelabs/GlaxoSmithKline, Novavax Advanced BioScience Laboratories. hepatocyte growth factor - Panorama, Bayarian Nordic, Bayarian Nordic/Statens Sosei hepatocyte growth factor kringle fragments -Serum Institute, GeneCure, Immune Response, Progenics, Therion Biologics, EntreMed Her-2/Neu peptides - Corixa United Biomedical, Chiron Herpes simplex glycoprotein DNA vaccine - HIV vaccine vCP1433 -- Aventis Pasteur HIV vaccine vCP1452 -- Aventis Pasteur Merck, Wyeth-Lederle Vaccines-Malvern, Genentech, GlaxoSmithKline, Chiron, HIV vaccine vCP205 -- Aventis Pasteur HL-9 -- American BioScience Takeda Herpes simplex vaccine -- Cantab HM-9239 -- Cytran HML-103 -- Hemosol Pharmaceuticals, CEL-SCI, Henderson HML-104 -- Hemosol Morley Herpes simplex vaccine live -- ImClone HML-105 -- Hemosol HML-109 -- Hemosol Systems/Wyeth-Lederle, Aventis Pasteur HGF derivatives -- Domne HMI -110 -- Hemosol HML-121 -- Hemosol hIAPP vaccine -- Crucell Hib-hepatitis B vaccine -- Aventis Pasteur hNLP -- Pharis Hookworm vaccine HIC 1 host-vector vaccines -- Henogen HIP-- Altachem Hirudins - Biopharma, Cangene, Dongkook, HPM 1 -- Chugai Japan Energy Corporation, Pharmacia HPV vaccine -- MediGene HSA - Meristem Corporation, SIR International, Sanofi-HSF - StressGen Synthelabo, Sotragene, Rhein Biotech HIV edible vaccine - ProdiGene HSP carriers --Weizmann, Yeda, Peptor HSPPC-70 -- Antigenics HIV ap120 vaccine - Chiron, Aiinomoto, HSPPC-96 -- pathogen-derived --GlaxoSmithKline, ID Vaccine, Progenics, VaxGen Antigenics HIV gp120 vaccine gene therapy -HSV 863 -- Novartis HIV gp160 DNA vaccine - PowderJect, HTLV-I DNA vaccine Aventis Pasteur, Oncogen, Hyland HTLV-I vaccine Immuno, Protein Sciences HTLV-II vaccine -- Access HU 901 -- Tanox HIV gp41 vaccine -- Panacos Hu23F2G -- ICOS HIV HGP-30W vaccine -- CEL-SCI HIV immune globulin - Abbott, Chiron HuHMFG1 FIG. 1M

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HuMax-II 15 -- Genmab Humal YM -- Intracell Human krebs statika -- Yamanouchi HYB 190 -- Hybridon HYB 676 — Hybridon human monoclonal antibodies --I-125 MAb A33 -- Celltech Abgenix/Biogen, Abgenix/ Corixa, Ibritumomab tiuxetan -- IDEC Abgenix/Immunex, Abgenix/Lexicon, Abgenix/ Pfizer, Athersys/Medarex, IBT-9401 -- Ibex Biogen/MorphoSys, CAT/Searle, IBT-9402 -- Ibex IC 14 - ICOS Centocor/Medarex, Corixa/Kirin Brewery, Corixa/Medarex, Eos BioTech./Medarex, Idarubicin anti-Ly-2.1 – IDEC 114 -- IDEC Fos/Xenerex, Exelixis/Protein Design IDEC 131 -- IDEC Labs. ImmunoGen/ Raven. IDEC 152 - IDEC Medarex/B. Twelve. IDM 1 -- IDM MorphoSys/ImmunoGen. XTL IDPS -- Hollis-Eden Pharmaceuticals Biopharmaceuticals/Dyax. iduronate-2-sulfatase -- Transkaryotic Human monoclonal antibodies --Medarex/Northwest Biotherapeutics. Therapies IGF/IBP-2-13 -- Pharis Medarex/Seattle Genetics IGN-101 -- Igeneon human netrin-1 -- Exelixis human papillomavirus antibodies -- Epicyte IK HIR02 -- Iketon Human papillomavirus vaccine -- Biotech IL-11 -- Genetics Institute/AHP IL-13-PE38 - NeoPharm Australia, IDEC, StressGen Human papillomavirus vaccine MEDI 501 - IL-17 receptor -- Immunex MedImmune/GlaxoSmithKline IL-18BP -- Yeda IL-1Hy1 -- Hyseq Human papillomavirus vaccine MEDI IL-1ß -- Celltech 503/MEDI 504 --IL-1ß adjuvant -- Celltech MedImmune/GlaxoSmithKline 11.-2 -- Chiron Human papillomavirus vaccine TA-CIN --II -2 + II -12 -- Hoffman La-Roche Cantab Pharmaceuticals Human papillomavirus vaccine TA-HPV --II -6/sII -6R fusion -- Hadasit Cantab Pharmaceuticals II -6R derivative -- Tosoh Human papillomavirus vaccine TH-GW --IL-7-Dap 389 fusion toxin -- Ligand IM-862 -- Cytran Cantab/GlaxoSmithKline human polyclonal antibodies - Biosite/Eos IMC-1C11 -- ImClone imiglucerase -- Genzyme BioTech./ Medarex Immune globulin intravenous (human) -human type II anti factor VIII monoclonal antibodies -- ThromboGenics Hoffman La Roche immune privilege factor -- Proneuron humanised anti glycoprotein lb murine Immunocal -- Immunotec monoclonal antibodies -- ThromboGenics Immunogene therapy - Briana Bio-Tech HumaRAD -- Intracell Immunoliposomal 5-fluorodeoxyuridine-HuMax EGFR -- Genmab dipalmitate --HuMax-CD4 -- Medarex FIG. 1N

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integrin antagonists - Merck immunosuppressant vaccine -- Aixlie interferon (Alpha2) -- SRC VB VECTOR, immunotoxin – Antisoma, NIH ImmuRAIT-Re-188 - Immunomedics Viragen, Dong-A, Hoffman La-Roche, Genentech imreg-1 - Imreg infertility -- Johnson & Johnson, E-TRANS interferon - BioMedicines, Human Genome Influenza virus vaccine -- Aventis Pasteur, Sciences Protein Sciences interferon (Alfa-n3)—Interferon Sciences inhibin -- Biotech Australia, Human Intl. interferon (Alpha), Biphasix -- Helix Therapeutics Inhibitory G protein gene therapy interferon (Alpha)-Amgen, BioNative, Novartis, Genzyme Transgenics, INKP-2001 -- InKine Hayashibara, Inhale Therapeutics Inolimomab -- Diaclone Systems, Medusa, Flamel, Dong-A, insulin -- AutoImmune, Altea, Biobras, BioSante, Bio-Tech. General, Chong Kun GeneTrol, Nastech, Shantha, Dang, Emisphere, Flamel, Provalis, Rhein Wassermann, LG Chem, Sumitomo, Aventis, Behring EGIS, Pepgen, Servier, Biotech, TranXenoGen insulin (bovine) -- Novartis Rhein Biotech. interferon (Alpha2A) insulin analogue -- Eli Lilly Insulin Aspart -- Novo Nordisk interferon (Alpha2B) - Enzon, Scheringinsulin detemir -- Novo Nordisk Plough, Biogen, IDEA interferon (Alpha-N1) -- GlaxoSmithKline insulin glargine -- Aventis insulin inhaled – Inhale Therapeutics interferon (beta) - Rentschler, GeneTrol, Meristem, Rhein Biotech, Toray, Yeda, Systems, Alkermes insulin oral -- Inovax Dajichi, Mochida insulin. AeroDose -- AeroGen interferon (Beta1A) – Serono, Biogen interferon (beta1A), inhale -- Biogen insulin, AERx -- Aradiam interferon (B1b)- Chiron insulin, BEODAS -- Elan interferon (tau) -- Pepgen insulin, Biphasix -- Helix insulin, buccal -- Generex Interferon alfacon-1 -- Amgen Interferon alpha-2a vaccine insulin, 12R -- Flemington insulin, intranasal -- Bentley Interferon Beta 1b -- Schering/Chiron, insulin, oral - Nobex, Unigene InterMune Interferon Gamma -- Boehringer Ingelheim, insulin, Orasome -- Endorex Sheffield, Rentschler, Havashibara insulin, ProMaxx -- Epic interferon receptor, Type I - Serono insulin, Quadrant -- Elan interferon(Gamma1B) - Genentech insulin, recombinant -- Aventis Interferon-alpha-2b + ribavirin - Biogen, insulin, Spiros - Elan insulin, Transfersome -- IDEA ICN insulin, Zymo, recombinant -- Novo Nordisk Interferon-alpha-2b gene therapy --Schering-Plough insulinotropin -- Scios Interferon-con1 gene therapy insulvsin gene therapy -

FIG. 10

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IPF -- Metabolex interleukin-1 antagonists -- Dompe IR-501 -- Immune Response Interleukin-1 receptor antagonist -- Abbott ISIS 9125 -- Isis Pharmaceuticals Bioresearch, Pharmacia Interleukin-1 receptor type I -- Immunex ISURF No. 1554 — Millennium ISURF No. 1866 - Iowa State Univer. interleukin-1 receptor Type II -- Immunex Interleukin-10 - DNAX, Schering-Plough ITF-1697 - Italfarmaco IxC 162 -- Ixion Interleukin-10 gene therapy interleukin-12 -- Genetics Institute, Hoffman J 695 -- Cambridge Antibody Tech., Genetics Inst., Knoll La-Roche interleukin-13 -- Sanofi Jagged + FGF -- Repair interleukin-13 antagonists -- AMRAD JKC-362 -- Phoenix Pharmaceuticals JTP-2942 - Japan Tobacce Interleukin-13-PE38QQR Juman monoclonal antibodies -interleukin-15 -- Immunex Medarex/Raven interleukin-16 -- Research Corp K02 -- Axvs Pharmaceuticals interleukin-18 -- GlaxoSmithKline Keliximab -- IDEC Interleukin-1-alpha -- Immunex/Roche Keyhole limpet haemocyanin interleukin-2 - SRC VB VECTOR, Alinomoto, Biomira KGF - Amgen KM 871 -- Kyowa Interleukin-3 -- Cangene KPI 135 -- Scios Interleukin-4 -- Immunology Ventures, KPI-022 -- Scios Sanofi Winthrop, Schering-Plough, Immunex/ Sanofi Winthrop, Bayer, Ono Kringle 5 KSB 304 Interleukin-4 + TNF-Alpha -- NIH KSB-201 -- KS Biomedix interleukin-4 agonist -- Bayer interleukin-4 fusion toxin -- Ligand L 696418 - Merck Interleukin-4 receptor - Immunex, Immun L 703801 -- Merck L1 -- Acorda Interleukin-6 - Alinomoto, Cangene, Yeda, Genetics Institute. Novartis L-761191 -- Merck lactoferrin - Meristem, Pharming, Agennix interleukin-6 fusion protein interleukin-6 fusion toxin - Ligand, Serono lactoferrin cardio -- Pharming LAG-3 -- Serono interleukin-7 - IC Innovations LAIT -- GEMMA interleukin-7 receptor -- Immunex LAK cell cytotoxin -- Arizona interleukin-8 antagonists -- Kyowa lamellarins - PharmaMar/University of Hakko/Millennium/Pfizer interleukin-9 antagonists -- Genaera Malaga interleukins -- Cel-Sci Jaminin A peptides -- NIH lodine I 131 tositumomab -- Corixa lanoteplase -- Genetics Institute ior EPOCIM -- Center of Molecular laronidase -- BioMarin Lassa fever vaccine Immunology LCAT -- NIH lor-P3 -- Center of Molecular Immunology LDP 01 -- Millennium IP-10 -- NIH

FIG. 1P

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Lyme disease vaccine -- Aquila LDP 02 -- Millennium Biopharmaceuticals, Aventis, Pasteur, Lecithinized superoxide dismutase --Symbicom, GlaxoSmithKline, Hyland Seikagaku LeIF adiuvant --- Corixa Immuno, Medimmune Lymphocytic choriomeningitis virus vaccine leishmaniasis vaccine -- Corixa lymphoma vaccine - Biomira, Genitope lenercept -- Hoffman La-Roche LYP18 Lenograstim - Aventis, Chugai lys plasminogen, recombinant lepirudin -- Aventis Lysosomal storage disease gene therapy -leptin - Amgen, IC Innovations Leptin gene therapy -- Chiron Corporation Avigen lysostaphin -- Nutrition 21 leptin, 2nd-generation -- Amgen M 23 -- Gruenenthal leridistim -- Pharmacia M1 monocional antibodies -- Acorda leuprolide, ProMaxx -- Epic Therapeutics leuprorelin, oral -- Unigene MA 16N7C2 – Corvas Intl. LeuTech -- Papatin malaria vaccine -- GlaxoSmithKline. LEX 032 -- SuperGen AdProTech, Antigenics, Apovia, Aventis LiDEPT -- Novartis Pasteur, Axis Genetics, Behringwerke, lipase -- Altus Biologics CDCP. Chiron Vaccines, Genzyme lipid A vaccine -- EntreMed Transgenics, Hawaii, MedImmune, NIH, lipid-linked anchor Tech. - ICRT, ID NYU, Oxxon, Roche/Saramane, Biotech Biomedical liposome-CD4 Tech. --- Sheffield Australia, Rx Tech Malaria vaccine CDC/NIIMALVAC-1 Listeria monocytogenes vaccine malaria vaccine, multicomponent I MB 1 mammaglobin -- Corixa LMB 7 LMB 9 -- Battelle Memorial Institute. NIH mammastatin -- Biotherapeutics mannan-binding lectin -- Natlmmu LM-CD45 -- Cantab Pharmaceuticals mannan-MUC1 -- Psiron Iovastatin -- Merck MAP 30 LSA-3 Marinovir -- Phytera LT-ß receptor -- Biogen lung cancer vaccine - Corixa MARstem -- Maret MB-015 - Mochida lusupultide -- Scios MBP -- ImmuLogic L-Vax -- AVAX MCI-028 -- Mitsubishi-Tokyo LY 355455 -- Eli Lilly MCIF -- Human Genome Sciences LY 366405 -- Eli Lilly MDC -- Advanced BioScience -- Akzo LY-355101 -- Eli Lilly Lyme disease DNA vaccine - Vical/Aventis Nobel, ICOS MDX 11 -- Medarex Pasteur MDX 210 -- Medarex

> MDX 22 -- Medarex MDX 22

#### FIG. 1Q

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Methionine lyase gene therapy --MDX 240 -- Medarex MDX 33 AntiCancer Met-RANTES - Genexa Biomedical, MDX 44 -- Medarex Serono MDX 447 -- Medarex Metreleptin MDX H210 - Medarex MGDF -- Kirin MDX RA -- Houston BioTech., Medarex ME-104 -- Pharmexa MGV -- Progenics micrin - Endocrine Measles vaccine microplasmin -- ThromboGenics Mecasermin -- Cephalon/Chiron, Chiron MIF -- Genetics Institute MEDI 488 -- Medimmune migration inhibitory factor -- NIH MEDI 500 Mim CD4.1 – Xvcte Therapies MEDI 507 -- BioTransplant mirostipen - Human Genome Sciences melanin concentrating hormone ---Neurocrine Biosciences MK 852 -- Merck Mobenakin -- NIS melanocortins -- OMRF Melanoma monoclonal antibodies -- Viragenmolgramostim -- Genetics Institute, Novartis monoclonal antibodies -- Abgenix/Celltech, melanoma vaccine -- GlaxoSmithKline. Immusol/ Medarex, Viragen/ Roslin Akzo Nobel, Avant, Aventis Pasteur, Institute, Cambridge Antibody Tech./Elan Bayarian Nordic, Biovector, CancerVax, Genzyme Molecular Oncology, Humbolt, MAb 108 -ImClone Systems, Memorial, NYU, Oxxon MAb 10D5 --MAb 14.18-interleukin-2 immunocytokine --Melanoma vaccine Magevac -- Therion memory enhancers - Scios Lexiaen MAb 14G2a -meningococcal B vaccine -- Chiron meningococcal vaccine -- CAMR MAb 15A10 -Meningococcal vaccine group B conjugate - MAb 170 -- Biomira North American Vaccine MAb 177Lu CC49 --Meningococcal vaccine group B MAb 17F9 MAb 1D7 recombinant - BioChem Vaccines. MAb 1F7 - Immune Network Microscience Meningococcal vaccine group Y conjugate - MAb 1H10-doxorubicin conjugate MAb 26-2F - North American Vaccine Meningococcal vaccine groups A B and C MAb 2A11 MAh 2E1 -- RW Johnson conjugate -- North American Vaccine MAb 2F5 Mepolizumab -- GlaxoSmithKline MAb 31.1 -- International BioImmune Metastatin - EntreMed, Takeda Met-CkB7 -- Human Genome Sciences Systems MAb 32 - Cambridge Antibody Tech., met-enkephalin -- TN! MFTH-1 -- Human Genome Sciences Peptech MAb 323A3 — Centocor methioninase -- AntiCancer

FIG. 1R

MAb 3C5

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MAb C242-PE conjugate MAb 3F12 MAb 3F8 MAb c30-6 MAb CA208-cytorhodin-S conjugate ---MAb 42/6 MAb 425 - Merck KGaA Hoechst Japan MAb 447-52D - Merck Sharp & Dohme MAb CC49 -- Enzon MAb 45-2D9- - haematoporphyrin MAb ch14.18 -MAb CH14.18-GM-CSF fusion protein conjugate MAb 4B4 Lexigen MAb 4E3-CPA conjugate -- BCM Oncologia MAb chCE7 MAb CI-137 -- AMRAD MAb 4E3-daunorubicin conjugate MAb cisplatin conjugate MAb 50-6 MAb 50-61A - Institut Pasteur MAb Cl.B-CD19 MAb CLB-CD19v MAb 5A8 --- Biogen MAb 791T/36-methotrexate conjugate MAb CLL-1 -- Peregrine MAb CLL-1-GM-CSF conjugate MAb 7c11.e8 MAb CLL-1-IL-2 conjugate -- Peregrine MAb 7E11 C5-selenocystamine conjugate MAb 93KA9 -- Novartis MAb CLN IgG -- doxorubicin conjugates MAb A5B7-cisplatin conjugate --MAb conjugates - Tanox Biodynamics Research, Pharmacia MAh D612 MAb Dal B02 MAb A5B7-I-131 MAb DC101 -- ImClone MAb A7 MAb EA 1 -MAb A717 -- Exocell MAb EC708 - Biovation MAb A7-zinostatin conjugate MAb ABX-RB2 - Abgentx MAb EP-5C7 -- Protein Design Labs MAb ERIC-1 -- ICRT MAh ACA 11 MAh AFP-I-131 - Immunomedics MAb F105 gene therapy MAb FC 2.15 MAb AP1 MAb G250 -- Centocor MAb AZ1 MAb B3-LvsPE40 conjugate MAb GA6 MAb GA733 MAb B4 – United Biomedical MAb Gliomab-H -- Viventia Biotech MAb B43 Genistein-conjugate MAb HB2-saporin conjugate MAb B43.13-Tc-99m -- Biomira MAb B43-PAP conjugate MAb HD 37 -MAb B4G7-gelonin conjugate MAb HD37-ricin chain-A conjugate MAb BCM 43-daunorubicin conjugate --MAb HNK20 -- Acambis MAb huN901-DM1 conjugate -BCM Oncologia MAb BIS-1 ImmunoGen MAb BMS 181170 - Bristol-Myers Squibb MAb I-131 CC49 - Corixa MAb ICO25 MAb BR55-2 MAb ICR12-CPG2 conjugate MAb BW494

MAb C 242-DM1 conjugate -- ImmunoGen MAb ICR-62

FIG. 1S

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MAb IRac-ricin A conjugate MAb R-24 MAh R-24 a Human GD3 -- Celltech MAb K1 MAb RFB4-ricin chain A conjugate MAb KS1-4-methotrexate conjugate MAb RFT5-ricin chain A conjugate MAb L6 -- Bristol-Myers Squibb, Oncogen MAb SC 1 MAb LiCO 16-88 MAb SM-3 -- ICRT MAb LI 2-I-131 - Immunomedics MAb SMART 1D10 -- Protein Design Labs MAb LL2-Y-90 MAb SMART ABL 364 -- Novartis MAb LS2D617 -- Hybritech MAb SN6f MAb LYM-1-gelonin conjugate MAb SN6f-deglycosylated ricin A chain MAb LYM-1-I-131 MAb LYM-1-Y-90 conjugate -MAb SN6i MAb LYM-2 -- Peregrine MAb SN7-ricin chain A conjugate MAb M195 MAb T101-Y-90 conjugate -- Hybritech MAb M195-bismuth 213 conjugate --MAb T-88 - Chiron Protein Design Labs MAb M195-gelonin conjugate MAb TB94 -- Cancer ImmunoBiology MAb TEC 11 MAb M195-I-131 MAb TES-23 -- Chugai MAh M195-Y-90 MAb TM31 -- Avant MAb MA 33H1 -- Sanofi MAb TNT-1 -- Cambridge Antibody Tech., MAb MAD11 MAb MGb2 Peregrine MAb TNT-3 MAb MINT5 MAb TNT-3 -- IL2 fusion protein -.MAb MK2-23 MAb MOC31 ETA(252-613) conjugate MAb TP3-At-211 MAb TP3-PAP conjugate -MAb MOC-31-In-111 MAb MOC-31-PE conjugate MAb UJ13A -- ICRT MAb UN3 MAb MR6 -MAb ZME-018-gelonin conjugate MAb MRK-16 -- Aventis Pasteur MAb-BC2 -- GlaxoSmithKline MAh MS11G6 MAb-DM1 conjugate -- ImmunoGen MAh MX-DTPA BrE-3 MAb-ricin-chain-A conjugate -- XOMA MAb MY9 MAb-temoporfin conjugates MAb Nd2 -- Tosoh Monopharm C -- Viventia Biotech MAb NG-1 -- Hygeia monteplase -- Eisai MAb NM01 - Nissin Food montirelin hydrate -- Gruenenthal MAb OC 125 MAb OC 125-CMA conjugate moroctocog alfa -- Genetics Institute MAb OKI-1 -- Ortho-McNeil Moroctocog-alfa -- Pharmacia MP 4 MAb OX52 -- Bioproducts for Science MP-121 -- Biopharm MAb PMA5 MP-52 - Biopharm MAb PR1

FIG. 1T

MAb prost 30

MRA -- Chugai

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Neuroprotective vaccine -- University of MS 28168 -- Mitsui Chemicals, Nihon Auckland Scherina neurotrophic chimaeras -- Regeneron MSH fusion toxin -- Ligand neurotrophic factor - NsGene, CereMedix MSI-99 -- Genaera MT 201 -- Micromet NeuroVax -- Immune Response neurturin -- Genentech Muc-1 vaccine -- Corixa neutral endopeptidase -- Genentech mucosal tolerance - Aberdeen NGF enhancers -- NeuroSearch mullerian inhibiting subst NHL vaccine -- Large Scale Biology muplestim -- Genetics Institute. Novartis. NIP45 -- Boston Life Sciences DSM Anti-Infectives NKI-R20 murine MAb -- KS Biomedix Mutant somatropin -- JCR Pharmaceutical NM 01 - Nissin Food NMI-139 -- NitroMed MV 833 -- Toagosei Mycoplasma pulmonis vaccine NMMP -- Genetics Institute Mycoprex - XOMA NN-2211 -- Novo Nordisk myeloperoxidase -- Henogen Nogain -- Regeneron myostatin -- Genetics Institute Nonacog alfa Nacolomab tafenatox -- Pharmacia Norelin -- Biostar nagrestipen - British Biotech Norwalk virus vaccine NRLU 10 -- NeoRx NAP-5 - Corvas Intl. NRLU 10 PE -- NeoRx NAPc2 - Corvas Intl. NT-3 -- Regeneron nartograstim - Kyowa Natalizumab -- Protein Design Labs NT-4/5 - Genentech NU 3056 Nateplase - NIH, Nihon Schering nateplase -- Schering AG NU 3076 NX 1838 -- Gilead Sciences NBI-3001 - Neurocrine Biosci. NY ESO-1/CAG-3 antigen -- NIH NRI-5788 - Neurocrine Biosci. NYVAC-7 -- Aventis Pasteur NBI-6024 -- Neurocrine Biosci. NZ-1002 -- Novazyme Nef inhibitors -- BRI Neisseria gonorrhoea vaccine - Antex obesity therapy -- Nobex Biologics OC 10426 -- Ontogen Neomycin B-arginine conjugate OC 144093 -- Ontogen OCIF -- Sankvo Nerelimomab -- Chiron Oct-43 - Otsuka Nerve growth factor - Amgen - Chiron, OK PSA - liposomal Genentech OKT3-gamma-1-ala-ala Nerve growth factor gene therapy OM 991 nesiritide citrate -- Scios OM 992 neuregulin-2 -- CeNeS neurocan -- NYU Omalizumab -- Genentech neuronal delivery system -- CAMR oncoimmunin-L -- NIH

# **FIG. 1U**

Oncolvsin B - ImmunoGen

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Oncolvsin CD6 -- ImmunoGen Oncolvsin M -- ImmunoGen Oncolvsin S -- ImmunoGen Oncophage -- Antigenics Oncostatin M -- Bristol-Myers Squibb OncoVax-CL -- Jenner Biotherapies OncoVax-P -- Jenner Biotherapies onercept -- Yeda onychomycosis vaccine -- Boehringer Ingelheim opebecan -- XOMA opioids -- Arizona Opreivekin -- Genetics Institute Org-33408 b-- Akzo Nobel Orolip DP -- EpiCept orvzacvstatin OSA peptides - GenSci Regeneration osteoblast-cadherin GF -- Pharis Osteocalcin-thymidine kinase gene therapy PEG anti-ICAM MAb -- Boehringer osteogenic protein -- Curis osteopontin - OraPharma osteoporosis peptides - Integra, Telios osteoprotegerin - Amgen, SnowBrand otitis media vaccines -- Antex Biologics ovarian cancer -- University of Alabama OX40-IgG fusion protein -- Cantab, Xenova P 246 -- Diatide P 30 -- Alfacell p1025 -- Active Biotech P-113<sup>^</sup> -- Demegen P-16 peptide -- Transition Therapeutics p43 -- Ramot P-50 peptide -- Transition Therapeutics p53 + RAS vaccine -- NIH, NCI PACAP(1-27) analogue paediatric vaccines -- Chiron Pafase -- ICOS PAGE-4 plasmid DNA -- IDEC PAI-2 -- Biotech Australia, Human Therapeutics Palivizumab -- Medimmune

PAM 4 -- Merck pamiteplase -- Yamanouchi pancreatin, Minitabs -- Eurand Pangen -- Fournier Pantarin - Selective Genetics Parainfluenza virus vaccine – Pharmacia. Pierre Fabre paraoxanase - Esperion parathyroid hormone - Abiogen, Korea Green Cross Parathyroid hormone (1-34) --Chugai/Suntory Parkinson's disease gene therapy -- Cell Genesys/ Ceregene Parvovirus vaccine -- MedImmune PCP-Scan – Immunomedics PDGF cocktail -- Theratechnologies peanut allergy therapy -- Dynavax Ingelheim PEG asparaginase – Enzon PEG alucocerebrosidase PEG hirudin - Knoll PEG interferon-alpha-2a -- Roche PEG interferon-alpha-2b + ribavirin -Biogen, Enzon, ICN Pharmaceuticals. Schering-Piough PEG MAb A5B7 --Pegacaristim - Amgen -- Kirin Brewery --ZvmoGenetics Pegaldesleukin – Research Corp pegaspargase -- Enzon pegfilgrastim -- Amgen PEG-interferon Alpha -- Viragen PEG-interferon Alpha 2A -- Hoffman La-Roche PEG-interferon Alpha 2B -- Schering-Plough PEG-r-hirudin -- Abbott PFG-uricase -- Mountain View Pegvisomant – Genentech

FIG. 1V

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PEGylated proteins, PolyMASC -- Valentis Pharmaprojects No. 5947 -- StressGen PEGylated recombinant native human leptin Pharmaprojects No. 5961 --Theratechnologies - Roche Pharmaprojects No. 5962 -- NIH Pemtumomab Pharmaprojects No. 5966 -- NIH Penetratin -- Cyclacel Pharmaprojects No. 5994 -- Pharming Pepscan - Antisoma Pharmaprojects No. 5995 -- Pharming peptide G - Peptech, ICRT Pharmaprojects No. 6023 -- IMMUCON peptide vaccine -- NIH .NCI Pharmaprojects No. 6063 -- Cytoclonal Pexelizumab pexiganan acetate -- Genaera Pharmaprojects No. 6073 - SIDDCO Pharmaprojects No. 6115 - Genzyme Pharmaprojects No. 3179 -- NYU Pharmaprojects No. 3390 - Ernest Orlando Pharmaprojects No. 6227 - NIH Pharmaprojects No. 6230 - NIH Pharmaprojects No. 3417 -- Sumitomo Pharmaprojects No. 6236 - NIH Pharmaprojects No. 3777 -- Acambis Pharmaprojects No. 6243 -- NIH Pharmaprojects No. 4209 -- XOMA Pharmaprojects No. 4349 - Baxter Intl. Pharmaprojects No. 6244 -- NIH Pharmaprojects No. 6281 -- Senetek Pharmaprojects No. 4651 Pharmaprojects No. 4915 -- Avanir Pharmaprojects No. 6365 - NIH Pharmaprojects No. 5156 -- Rhizogenics Pharmaprojects No. 6368 - NIH Pharmaprojects No. 6373 -- NIH Pharmaprojects No. 5200 - Pfizer Pharmaprojects No. 6408 - Pan Pacific Pharmaprojects No. 5215 -- Origene Pharmaprojects No. 6410 -- Athersys Pharmaprojects No. 5216 -- Origene Pharmaprojects No. 5218 -- Origene Pharmaprojects No. 6421 - Oxford Pharmaprojects No. 5267 -- ML GlycoSciences Pharmaprojects No. 6522 -- Maxygen I aboratories Pharmaprojects No. 6523 -- Pharis Pharmaprojects No. 5373 -- MorphoSys Pharmaprojects No. 6538 - Maxygen Pharmaprojects No. 5493 -- Metabolex Pharmaprojects No. 6554 - APALEXO Pharmaprojects No. 5707 - Genentech Pharmaprojects No. 6560 - Ardana Pharmaprojects No. 5728 -- Autogen Pharmaprojects No. 5733 -- BioMarin Pharmaprojects No. 6562 -- Bayer Pharmaprojects No. 6569 - Eos Pharmaprojects No. 5757 - NIH Phenoxazine Pharmaprojects No. 5765 --- Gryphon Pharmaprojects No. 5830 -- AntiCancer Phenylase -- Ibex Pigment epithelium derived factor -Pharmaprojects No. 5839 -- Dyax plasminogen activator inhibitor-1, Pharmaprojects No. 5849 -- Johnson & recombinant -- DuPont Pharmaceuticals .lohnson Pharmaprojects No. 5860 -- Mitsubishi-Tokyo

Pharmaprojects No. 5869 - Oxford

Pharmaprojects No. 5883 -- Asahi Brewery

GlycoSciences

FIG. 1W

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prostate-specific antigen -- EntreMed Plasminogen activators -- Abbott protein A -- RepliGen Laboratories, American Home Products, protein adhesives -- Enzon Boehringer Mannheim, Chiron Corporation, DuPont Pharmaceuticals, Eli protein C - Baxter Intl., PPL Therapeutics, Lilly, Shionogi, Genentech, Genetics ZymoGenetics protein C activator - Gilead Sciences Institute, GlaxoSmithKline, Hemispherx Biopharma, Merck & Co, Novartis, protein kinase R antags -- NIH Pharmacia Corporation, Wakamoto, Yeda protirelin - Takeda plasminogen-related peptides -- Bio-Tech. protocadherin 2 -- Caprion Pro-urokinase - Abbott, Bristol-Myers General/MGH Squibb, Dainippon, Tosoh -- Welfide platelet factor 4 – RepliGen P-selectin alycoprotein ligand-1 -- Genetics Platelet-derived growth factor - Amgen --Institute ZvmoGenetics pseudomonal infections -- InterMune plusonermin-Hayashibara Pseudomonas vaccine -- Cytovax PMD-2850 -- Protherics PSGL-Ig -- American Home Products Pneumococcal vaccine - Antex Biologics, PSP-94 -- Procyon Aventis Pasteur Pneumococcal vaccine intranasal --PTH 1-34 -- Nobex BioChem Vaccines/Biovector Quilimmune-M -- Antigenics R 101933 PR1A3 R 125224 -- Sankvo PR-39 RA therapy -- Cardion pralmorelin -- Kaken Rables vaccine recombinant -- Aventis Pretarget-Lymphoma -- NeoRx Pasteur, BioChem Vaccines, Kaketsuken Priliximab -- Centocor **Pharmaceuticals** PRO 140 -- Progenics RadioTheraCIM -- YM BioSciences PRO 2000 -- Procept Ramot project No. 1315 -- Ramot PRO 367 - Progenics Ramot project No. K-734A -- Ramot PRO 542 -- Progenics Ramot project No. K-734B -- Ramot pro-Apo A-I -- Esperion RANK - Immunex prolactin -- Genzyme Prosaptide TX14(A) -- Bio-Tech. General ranpirnase -- Alfacell ranpirnase-anti-CD22 MAb -- Alfacell prostate cancer antbodies - Immunex, RANTES inhibitor -- Milan UroCor RAPID drug delivery systems -- ARIAD prostate cancer antibody therapy -rasburicase -- Sanofi Genentech/UroGenesys, rBPI-21, topical -- XOMA Genotherapeutics prostate cancer immunotherapeutics -- The RC 529 -- Corixa rCFTR -- Genzyme Transgenics PSMA Development Company prostate cancer vaccine - Aventis Pasteur, RD 62198 rDnase - Genentech Zonagen, Corixa, Dendreon, Jenner RDP-58 -- SangStat Biotherapies, Therion Biologics FIG. 1X

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Ribozyme gene therapy -- Genset RecepTox-Fce -- Keryx Rickettsial vaccine recombinant RecepTox-GnRH - Keryx, MTR RIGScan CR -- Neoprobe Technologies RIP-3 -- Rigel RecepTox-MBP - Keryx, MTR RK-0202 -- RxKinetix Technologies RLT peptide -- Esperion recFSH -- Akzo Nobel, Organon rM/NEI -- IVAX REGA 3G12 mCRP -- Immtech Regavirumab -- Teijin relaxin - Connetics Corp RN-1001 - Renovo RN-3 -- Renovo Renal cancer vaccine -- Macropharm repifermin -- Human Genome Sciences RNAse conjugate -- Immunomedics Respiratory syncytial virus PFP-2 vaccine - RO 631908 - Roche Rotavirus vaccine -- Merck Wyeth-Lederle RP 431 -- DuPont Pharmaceuticals Respiratory syncytial virus vaccine -GlaxoSmithKline, Pharmacia, Pierre Fabre RP-128 -- Resolution Respiratory syncytial virus vaccine RPE65 gene therapy --RPR 110173 -- Aventis Pasteur inactivated RPR 115135 -- Aventis Pasteur Respiratory syncytial virus-parainfluenza RPR 116258A - Aventis Pasteur virus vaccine -- Aventis Pasteur. rPSGL-Ig -- American Home Products Pharmacia Reteplase -- Boehringer Mannheim, r-SPC surfactant -- Byk Gulden Hoffman La-Roche rV-HER-2/neu -- Therion Biologics SA 1042 -- Sankvo Retropep -- Retroscreen sacrosidase - Orphan Medical RFB4 (dsFv) PE38 RFI 641 - American Home Products Sant 7 Sargramostim -- Immunex RFTS -- UAB Research Foundation saruplase -- Gruenenthal RG 12986 -- Aventis Pasteur Satumomab -- Cytogen RG 83852 - Aventis Pasteur SB 1 -- COR Therapeutics RG-1059 - RepliGen SB 207448 -- GlaxoSmithKline rGCR - NIH SB 208651 -- GlaxoSmithKline rGLP-1 -- Restoragen SB 240683 — GlaxoSmithKline rGRF -- Restoragen SB 249415 -- GlaxoSmithKline rh Insulin – Eli Lilly RHAMM targeting peptides -- Cangene SB 249417 - GlaxoSmithKline SB 6 — COR Therapeutics rHb1.1 - Baxter Intl. rhCC10 - Claragen SB RA 31012 -SC 56929 - Pharmacia rhCG -- Serono SCA binding proteins - Curis, Enzon Rheumatoid arthritis gene therapy scFv(14E1)-ETA Berlex Laboratories, Rheumatoid arthritis vaccine -- Veterans Schering AG Affairs Medical Center ScFv(FRP5)-ETA rhLH - Serono

FIG. 1Y

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ScFv6C6-PE40 --SCH 55700 -- Celltech Schistosomiasis vaccine -- Glaxo Wellcome/Medeva, Brazil SCPF -- Advanced Tissue Sciences scuPA-suPAR complex -- Hadasit SD-9427 -- Pharmacia SDF-1 -- Ono SDZ 215918 -- Novartis SDZ 280125 -- Novartis SDZ 89104 -- Novartis SDZ ABL 364 -- Novartis SDZ MMA 383 - Novartis serine protease inhibs - Pharis sermorelin acetate -- Serono SERP-1 -- Viron sertenef -- Dainippon serum albumin, Recombinant human --Aventis Behring serum-derived factor -- Hadasit Sevirumab -- Novartis SGN 14 -- Seatle Genetics SGN 15 -- Seatle Genetics SGN 17/19 - Seatle Genetics SGN 30 -- Seatle Genetics SGN-10 -- Seatle Genetics SGN-11 -- Seatle Genetics SH 306 - DuPont Pharmaceuticals Shanvac-B - Shantha Shigella flexneri vaccine - Avant, Acambis, Novavax Shigella sonnei vaccine -sICAM-1 -- Boehringer Ingelheim Silteplase -- Genzyme SIV vaccine -- Endocon, Institut Pasteur SK 896 -- Sanwa Kagaku Kenkyusho SK-827 -- Sanwa Kagaku Kenkyusho Skeletex -- CellFactors SKF 106160 - GlaxoSmithKline S-nitroso-AR545C --SNTP -- Active Biotech

somatomedin-1 - GroPep, Mitsubishi-Tokyo, NIH somatomedin-1 carrier protein -- Insmed somatostatin -- Ferring Somatotropin/ Human Growth Hormone -- Bio-Tech. General, Eli Lilly somatropin -- Bio-Tech. General, Alkermes, ProLease, Aventis Behring, Biovector, Cangene, Dong-A, Eli Lilly, Emisphere, Enact, Genentech, Genzyme Transgenics, Grandis/InfiMed, CSL, InfiMed, MacroMed, Novartis, Novo Nordisk, Pharmacia Serono, TranXenoGen somatropin derivative -- Schering AG somatropin, AIR -- Eli Lilly Somatropin, inhaled -- Eli Lilly/Alkermes somatropin, Kabi -- Pharmacia somatropin, Orasome -- Novo Nordisk Sonermin - Dainippon Pharmaceutical SP(V5,2)C -- Supertek SPf66 sphingomyelinase -- Genzyme SR 29001 -- Sanofi SR 41476 -- Sanofi SR-29001 -- Sanofi SS1(dsFV)-PE38 -- NeoPharm ß2 microalobulin – Avidex ß2-microglobulin fusion proteins -- NIH ß-amyloid peptides -- CeNeS ß-defensin -- Pharis Staphylococcus aureus infections --Inhibitex/ZLB Staphylococcus aureus vaccine conjugate --Nabi Staphylococcus therapy - Tripep Staphylokinase - Biovation, Prothera. Thrombogenetics Streptococcal A vaccine -- M6 Pharmaceuticals, North American Vaccine Streptococcal B vaccine -- Microscience

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Streptococcal B vaccine recombinant --TFPI - EntreMed Biochem Vaccines taD-IL-2 - Takeda TGF-Alpha -- ZymoGenetics Streptococcus pyogenes vaccine TGF-B -- Kolon STRL-33 -- NIH TGF-B2 -- Insmed Subalin -- SRC VB VECTOR TGF-ß3 -- OSI SUIS -- United Biomedical Thalassaemia gene therapy -- Crucell SUIS-LHRH -- United Biomedical TheraCIM-h-R3 — Center of Molecular SUN-E3001 -- Suntory super high affinity monoclonal antibodies -Immunology, YM BioSciences Theradigm-HBV -- Epimmune YM BioSciences Theradiam-HPV -- Epimmune Superoxide dismutase – Chiron, Enzon, Theradigm-malaria -- Epimmune Ube Industries, Bio-Tech, Yeda Theradigm-melanoma – Epimmune superoxide dismutase-2 -- OXIS TheraFab - Antisoma suppressin - UAB Research Foundation ThGRF 1-29 - Theratechnologies SY-161-P5 -- ThromboGenics ThGRF 1-44 -- Theratechnologies SY-162 -- ThromboGenics Systemic lupus erythematosus vaccine -thrombomodulin – Iowa, Novocastra Thrombopoietin -- Dragon Pharmaceuticals. MedClone/VivoRx Genentech T cell receptor peptide vaccine thrombopoietin, Pliva -- Receptron T4N5 liposomes -- AGI Dermatics TACI, soluble - ZymoGenetics Thrombospondin 2 – targeted apoptosis -- Antisoma thrombostatin - Thromgen thymalfasin -- SciClone tasonermin -- Boehringer Ingelheim thymocartin - Gedeon Richter TASP thymosin Alpha1 -- NIH TASP-V thyroid stimulating hormone - Genzyme Tat peptide analogues -- NIH tICAM-1 - Bayer TBP 1 -- Yeda Tick anticoagulant peptide -- Merck TBP !! TBV25H -- NIH TIF -- Xoma Tc 99m ior cea1 -- Center of Molecular Tifacogin – Chiron, NIS, Pharmacia Tissue factor -- Genentech **Immunology** Tissue factor pathway inhibitor Tc 99m P 748 -- Diatide Tc 99m votumumab -- Intracell TJN-135 -- Tsumura TM 27 - Avant Tc-99m rh-Annexin V - Theseus Imaging TM 29 -- Avant teceleukin -- Biogen tenecteplase -- Genentech TMC-151 – Tanabe Seiyaku TNF tumour necrosis factor -- Asahi Kasei Teriparatide -- Armour Pharmaceuticals, TNF Alpha -- Cytlmmune Asahi Kasei, Eli Lilly TNF antibody -- Johnson & Johnson terlipressin - Ferring testisin -- AMRAD TNF binding protein -- Amgen TNF degradation product -- Oncotech Tetrafibricin -- Roche

FIG. 1AA

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TXU-PAP TNF receptor -- Immunex TNF receptor 1, soluble -- Amgen TY-10721 - TOA Eivo TNF Tumour necrosis factor-alpha - Asahi Type I diabetes vaccine -- Research Corp Typhoid vaccine CVD 908 Kasei, Genetech, Mochida U 143677 -- Pharmacia TNF-Alpha inhibitor -- Tripep TNFR:Fc gene therapy - Targeted Genetics U 81749 -- Pharmacia UA 1248 -- Arizona TNF-SAM2 UGIF -- Sheffield ToleriMab - Innogenetics Toxoplasma gondii vaccine --UIC 2 **UK 101** GlaxoSmithKline UK-279276 – Corvas Intl. TP 9201 -- Telios urodilatin - Pharis TP10 -- Avant TP20 -- Avant uteroferrin-- Pepgen tPA --- Centocor trafermin -- Scios V 20 -- GLYCODesign TRAIL/Apo2L -- Immunex transferrin-binding proteins -- CAMR Transforming growth factor-beta-1 --Genentech transport protein -- Genesis **Pharmaceuticals** TRH -- Ferring Triabin -- Schering AG Triconal Triflavin troponin I -- Boston Life Sciences Systems TRP-2^ -- NIH trypsin inhibitor -- Mochida Peregrine TSP-1 gene therapy -TT-232 vasostatin -- NIH TTS-CD2 -- Active Biotech Tuberculosis vaccine -- Aventis Pasteur, Genesis Tumor Targeted Superantigens -- Active Biotech - Pharmacia tumour vaccines - PhotoCure tumour-activated prodrug antibody Vitaxin conjugates -- Millennium/ImmunoGen tumstatin -- ILEX Tuvirumab -- Novartis WP 652 TV-4710 - Teva

TWEAK receptor -- Immunex

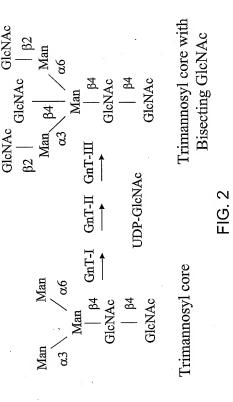
urofollitrophin -- Serono V2 vasopressin receptor gene therapy vaccines -- Active Biotech Varicella zoster glycoprotein vaccine -Research Corporation Technologies Varicella zoster virus vaccine live - Cantab Vascular endothelial growth factor -Genentech, University of California Vascular endothelial growth factors – R&D vascular targeting agents -- Peregrine vasopermeation enhancement agents --VCL -- Bio-Tech, General VEGF - Genentech, Scios VEGF inhibitor -- Chugai VEGF-2 -- Human Genome Sciences VEGF-Trap --- Regeneron viscumin, recombinant -- Madaus Vitrase -- ISTA Pharmaceuticals West Nile virus vaccine -- Bavarian Nordic WT1 vaccine -- Corixa WX-293 -- Wilex BioTech. FIG. 1BB

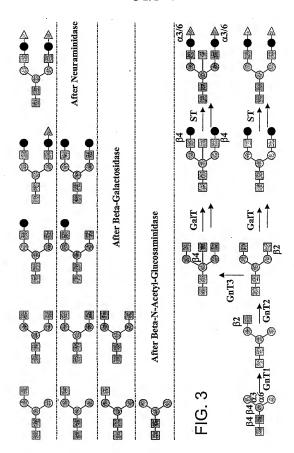
# 29/345

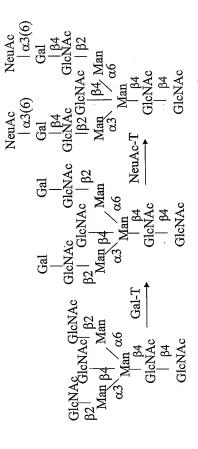
WX-360 -- Wilex BioTech.
WX-UK1 -- Wilex BioTech.
XMP-500 -- XOMA
XomaZyme-791 -- XOMA
XTL 001 -- XTL Biopharmaceuticals
XTL 002 -- XTL Biopharmaceuticals
yeast delivery system -- Globelmmune
Yersinia pestis vaccine
YIGSR-Stealth -- Johnson & Johnson
Yissum Project No. D-0460 -- Yissum

YM 207 – Yamanouchi YM 337 – Protein Design Labs Yttrium-90 labelled biotin Yttrium-90-labelled anti-CEA MAb T84.66 – ZD 0490 – AstraZeneca ziconotide – Elan ZK 157138 – Berlex Laboratories Zollmomab aritox Zorcell – Immune Response

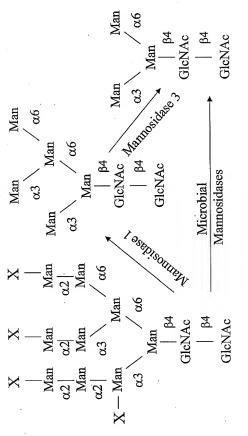
ZRXL peptides -- Novartis



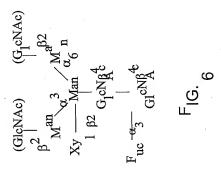


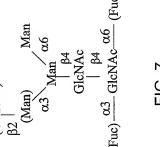


=1G. 4

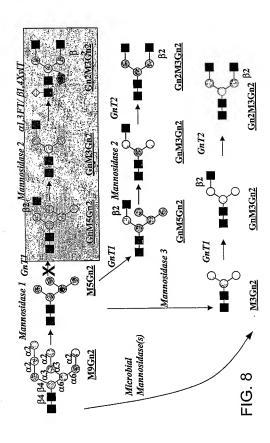


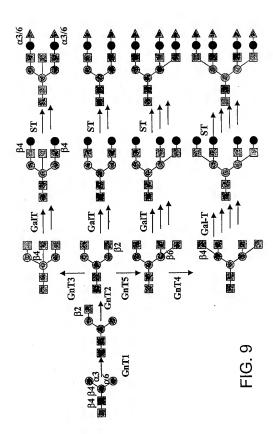
.IG. 5

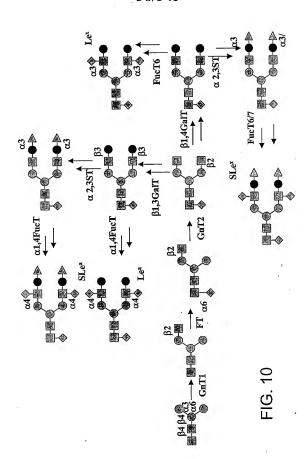




=1G. 7







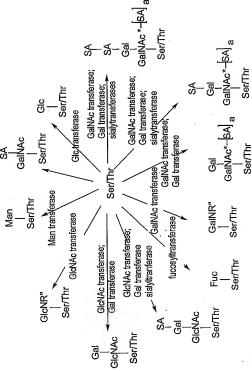


FIG. 11

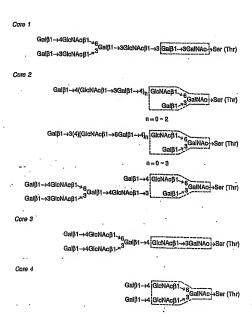
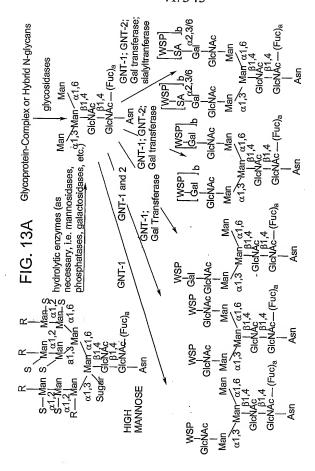
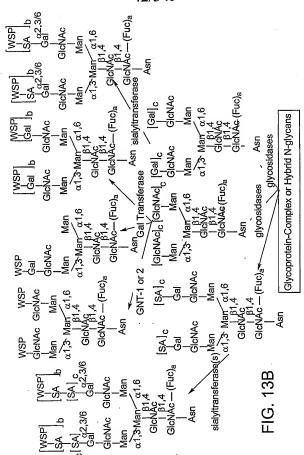


FIG. 12





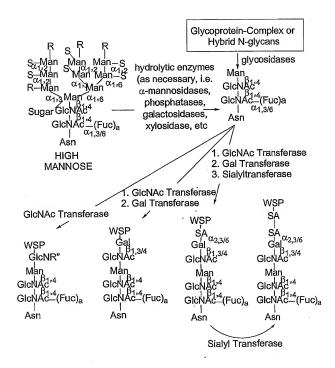


FIG. 14

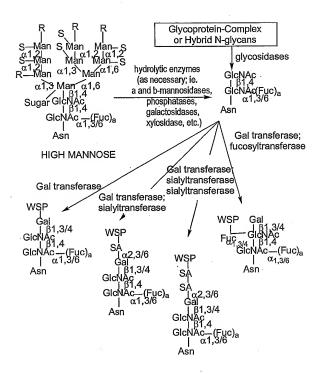


FIG. 15

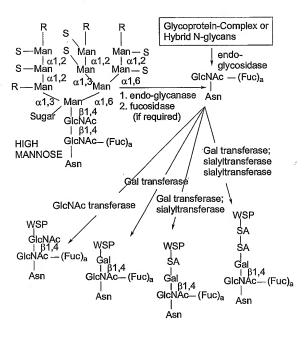
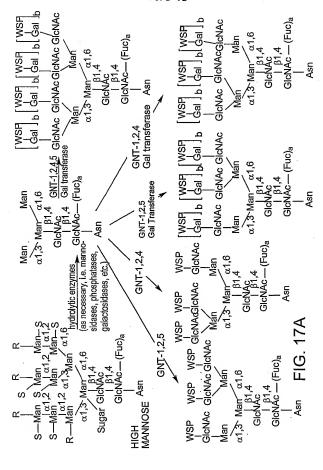
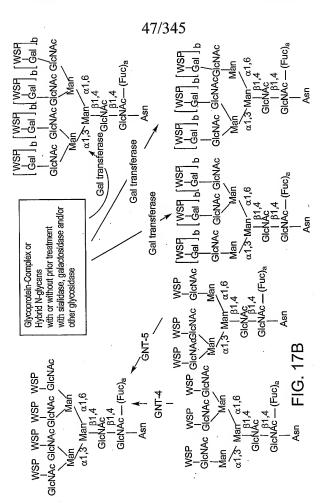
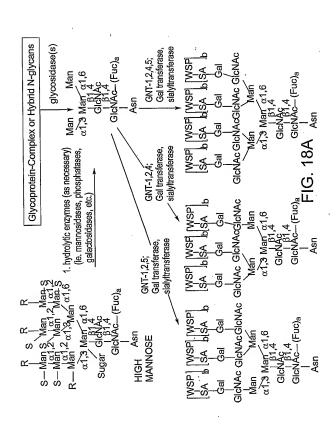
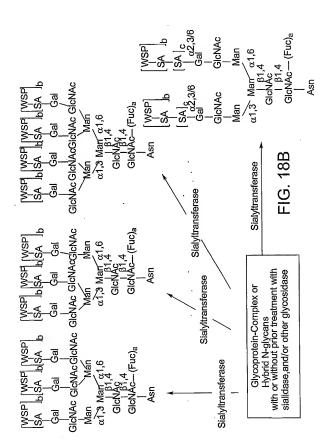


FIG. 16









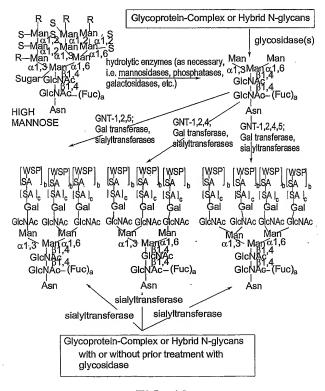
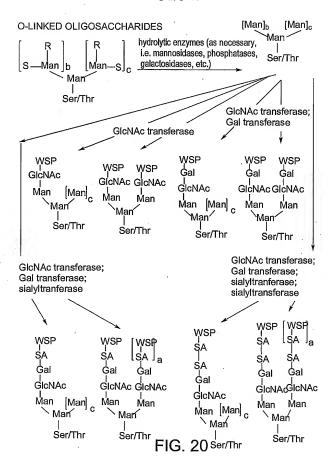
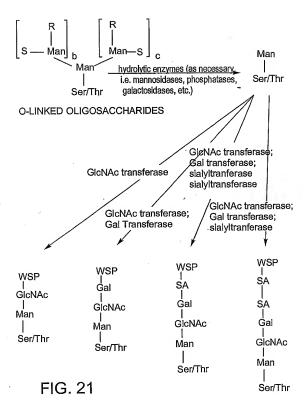


FIG. 19





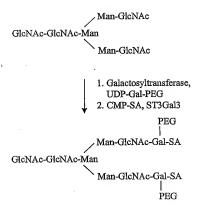
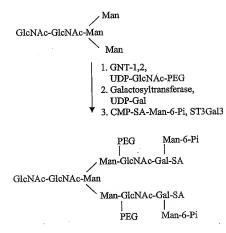


FIG. 22A



**FIG. 22B** 

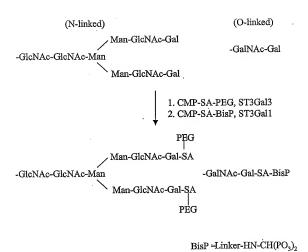
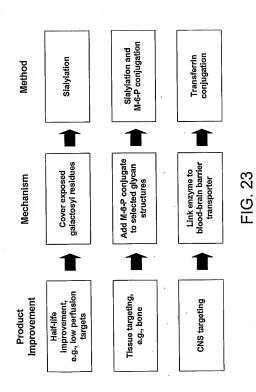


FIG. 22C



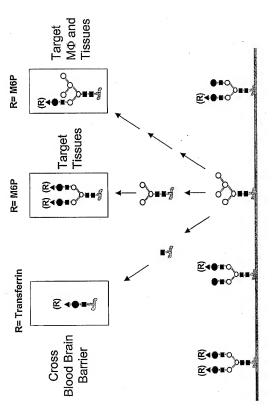
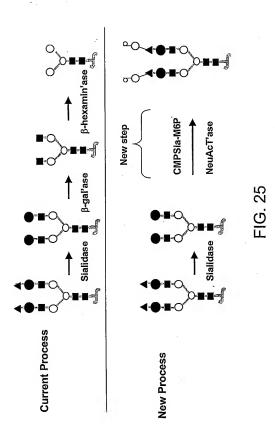


FIG. 24

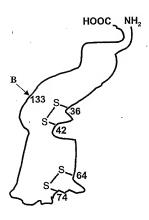




N-acetylglucosamine Mannose Sialic acid Galactose

FIG. 26

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$$\mathbf{B} \leftarrow \begin{pmatrix} (\mathrm{Sia})_b \\ -\mathrm{GalNAc-(Gal)_a-(Sia)_c-(R)_d} \end{pmatrix}_c$$

a-c, e (independently selected) = 0 or 1; d=0; R= modifying group, mannose, oligo-mannose

FIG. 27A

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CHO, BHK, 293 cells, Vero expressed G-CSF a-c, e (independently selected) = 0 or 1; d = 0

Sialidase
 CMP-SA-PEG, ST3Gal1

a-d, e (independently selected) = 0 or 1; R = PEG.

# FIG. 27B

Insect cell expressed G-CSF a, e (independently selected) = 0 or 1; b, c, d = 0.

Galactosyltransferase, UDP-Gal
 CMP-SA-PEG, ST3Gal1

a, c, d, e (independently selected) = 0 or 1; R = PEG.

# FIG. 27C

E. coli expressed G-CSF
a-e = 0.

1. GalNAc Transferase, UDP-GalNAc
2. CMP-SA-PEG, sialyltransferase
c, d, e (independently selected) = 0 or 1;

### FIG. 27D

a, b = 0; R = PEG.

NSO expressed G-CSF
a, e (independently selected) = 0 or 1;
b, c, d = 0

1. CMP-SA-levulinate, ST3Gal1

a, c, d, e (independently selected) = 0 or 1; b=0; R = PEG.

2. H<sub>4</sub>N<sub>2</sub>-PEG

# FIG. 27E

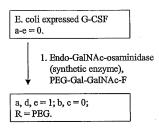


FIG. 27F

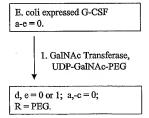


FIG. 27G

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$$\mathbf{A} \leftarrow \begin{bmatrix} (\operatorname{Fuc})_{i} \\ - \operatorname{GlcNAe} & \operatorname{GlcNAc-Man} \\ (R')_{dd} \end{bmatrix} \begin{bmatrix} (\operatorname{GlcNAc-(Gal)}_{a}]_{e^{-}} & (\operatorname{Sia})_{j}^{-} & (R)_{v} \\ - (\operatorname{GlcNAc-(Gal)}_{b}]_{f^{-}} & (\operatorname{Sia})_{k}^{-} & (R)_{w} \end{bmatrix}_{s} \\ \begin{bmatrix} (\operatorname{GlcNAc-(Gal)}_{o}]_{g^{-}} & (\operatorname{Sia})_{l}^{-} & (R)_{x} \\ - (\operatorname{GlcNAc-(Gal)}_{o}]_{g^{-}} & (\operatorname{Sia})_{l}^{-} & (R)_{y} \end{bmatrix}_{aa} \end{bmatrix}_{bb}$$

$$\mathbf{B} \leftarrow \begin{bmatrix} \text{GlcNAc-Gal})_{cc} - (\text{Sia})_{o} - (R)_{ee} \\ -\text{GalNAc-(Gal)}_{n} - (\text{Sia})_{p} - (R)_{z} \end{bmatrix}_{q}$$

a-d, i, n-u (independently selected) = 0 or 1. aa, bb, cc, dd, ee (independently selected) = 0 or 1. e-h (independently selected) = 0 to 6. j-m (independently selected) = 0 to 20.  $v-z=0; \ R=\text{modifying group, mannose, oligo-mannose.} \ R'=H, glycosyl residue, modifying group, glycoconjugate.$ 

FIG. 28A

#### 65/345

CHO, BHK, 293 cells, Vero expressed interferon alpha 14C.
a-d, aa, bb = 1; e-h = 1 to 4; cc, j-m, i, r-u (independently selected) = 0 or 1; q, n-p, v-z, cc, dd, ee = 0.

Sialidase
 CMP-SA-PEG, ST3Gal3

```
a-d, aa, bb = 1; e-h = 1 to 4;
bb, cc, i, r-u (independently selected) = 0 or 1;
q, n-p, v-z, cc, dd, ee = 0;
v-y (independently selected) = 1,
when j-m (independently selected) = 1;
R = PEG.
```

# FIG. 28B

```
Insect cell or fungi expressed interferon alpha-14C. a-d, f, h, j-q, s, u, v-z, cc, dd, ee = 0; e, g, i, r, t (independently selected) = 0 or 1; aa, bb = 1.
```

1. GNT's 1&2, UDP-GlcNAc 2. Galactosyltransferase, UDP-Gal-PEG

```
b, d, f, h, j-q, s, u, w, y, z, cc, dd, ee = 0;
a, c, e, g, i, r, t, v, x (independently selected) = 0 or 1;
v, x (independently selected) = 1,
when a, c, (independently selected) = 1;
aa, bb = 1; R = PEG.
```

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Yeast expressed interferon alpha-14C.
a-q, cc, dd, ee, v-z = 0;
r-y (independently selected) = 0 to 1;
aa, bb = 1;
R (branched or linear) = Man, oligomannose or polysaccharide.

- Endo-H
   Galactosyltransferase, UDP-Gal
   CMP-SA-PEG, ST3Gal3
- a-z, bb=0; aa=1; R'=-Gal-Sia-PEG.

FIG. 28D

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$$(Fuc)_{i} \\ A \leftarrow GlcnAc - GlcnAc - Man \\ (R')_{d} \\ (R')_{d} \\ (GlcnAc - Gal)_{a}]_{e} - (Sia)_{j} - (R)_{v} \\ [GlcnAc - (Gal)_{b}]_{r} - (Sia)_{k} - (R)_{w} \\ [GlcnAc - (Gal)_{e}]_{g} - (Sia)_{l} - (R)_{x} \\ [[GlcnAc - (Gal)_{d}]_{h} - (Sia)_{m} - (R)_{y} \\ [[GlcnAc - (Gal)_{d}]_{h} - (R)_{w} \\ [[GlcnAc - (Gal)_{d}]_{h}$$

a-d, i, r-u (independently selected) = 0 or 1. e-h (independently selected) = 0 to 4. j-m (independently selected) = 0 or 1. n, v-y = 0; z = 0 or 1. R = polymer; R' = sugar, glycoconjugate.

FIG. 28E

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```
CHO, BHK, 293 cells, Vero expressed interferon alpha-14C.

h = 1 to 3;
a-g, j-m, i (independently selected) = 0 or 1;
r-u (independently selected) = 0 or 1;
n, v-y = 0; z = 1.
```

```
1. CMP-SA-PEG, ST3Gal3
```

```
h=1 to 3;
a-g, i (independently selected) = 0 or 1;
r-u (independently selected) = 0 or 1;
j-m, v-y (independently selected) = 0 or 1;
z=1; n=0; R=PEG.
```

# FIG. 28F

```
Insect cell or fungi expressed interferon alpha-14C. a-d, f, h, j-n, s, u, v-y = 0; e, g, i, r, t (independently selected) = 0 or 1; z = 1.
```

```
    GNT's 1,2,4,5, UDP-GlcNAc
    Galactosyltransferase, UDP-Gal
    CMP-SA-PEG, ST3Gal3
```

```
a-m, r-y (independently selected) = 0 or 1;
z = 1; n = 0; R = PEG.
```

# FIG. 28G

Yeast expressed interferon alpha-14C. a-n = 0; r-y (independently selected) = 0 to 1; z = 1; R (branched or linear) = Man, oligomannose.

- mannosidases
- 2. GNT's 1,2,4,5, UDP-GlcNAc
- 3. Galactosyltransferase, UDP-Gal
- 4.. CMP-SA-PEG, ST3Gal3

a-m, r-y (independently selected) = 0 or 1; z = 1; n = 0; R = PEG.

# FIG. 28H

NSO expressed interferon alpha 14C. a-i, r-u (independently selected) = 0 or 1; j-m, n, v-y = 0; z = 1.

> CMP-SA-levulinate, ST3Gal3, buffer, salt
>  H<sub>4</sub>N<sub>2</sub>-PEG

a-i, j-m, r-y (independently selected) = 0 or 1; n = 0; z = 1; R = PEG.

### FIG. 281

```
CHO, BHK, 293 cells, Vero expressed interferon alpha-14C.

h = 1 to 3;
a-g, j-m, i (independently selected) = 0 or 1;
r-u (independently selected) = 0 or 1;
n, v-y = 0; z = 1.
```

# 1. CMP-SA-PEG, α2,8-ST

```
h = 1 to 3;
a-g, i, r-u (independently selected) = 0 or 1;
j-m (independently selected) = 0 to 2;
v-y (independently selected) = 1,
when j-m (independently selected) is 2;
z=1; n=0; R=PBG.
```

# FIG. 28J

```
CHO, BHK, 293 cells, Vero expressed Interferon alpha-14C.
a-g, j-m, r-u (independently selected) = 0 or 1;
h = 1 to 3; n, v-y = 0; z = 1.
```

- Sialidase
- 2. Trans-sialidase, PEG-Sia-lactose

a-g, j-m, r-y (independently selected) = 0 or 1; h = 1 to 3; n = 0; z = 1; R = PEG.

### FIG. 28K

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```
CHO, BHK, 293 cells, Vero expressed interferon alpha-14C.

h = 1 to 3;
a-g, j-m, i (independently selected) = 0 or 1;
r-u (independently selected) = 0 or 1;
n, v-y = 0; z = 1.

1. CMP-SA, α2,8-ST

h = 1 to 3;
a-g, i, r-u (independently selected) = 0 or 1;
j-m (independently selected) = 0 to 40;
z = 1; v-y, n = 0.
```

# FIG. 28L

```
Insect cell or fungi expressed interferon alpha-14C. a-d, f, h, j-n, s, u, v-y = 0; e, g, i, r, t (independently selected) = 0 or 1; z = 1.
```

```
    GNT's 1 & 2, UDP-GlcNAc
    Galactosyltransferase,
UDP-Gal-linker-SA-CMP
    ST3Gal3, transferrin
```

```
a, c, e, g, i, r, t, v, x (independently selected) = 0 or 1; z = 1; b, d, f, h, j-n, s, u, w, y = 0; R = \text{transferrin}.
```

# FIG. 28M

```
Insect cell or fungi expressed interferon alpha-14C. a-d, f, h, j-n, s, u, v-y = 0; e, g, i, r, t (independently selected) = 0 or 1; z = 1.
```

- endoglycanase
- 2. Galactosyltransferase,
  - UDP-Gal-linker-SA-CMP
- 3. ST3Gal3, transferrin

```
i (independently selected) = 0 or 1;
a-h, j-m, r-z = 0;
n = 1; R' = -Gal-linker-transferrin.
```

FIG. 28N



a-c, e, f (independently selected) = 0 or 1; d, g = 0; R = polymer, glycoconjugate.

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```
CHO, BHK, 293 cells, Vero expressed IF-alpha (2a or 2b).
a-c (independently selected) = 0 or 1; c = 1; d, f, g = 0
```

```
1. Sialidase
2. CMP-SA-PEG, ST3Gal1
```

```
a-d (independently selected) = 0 or 1;
e = 1; b, f, g = 0; R = PEG.
```

# FIG. 28P

Insect cell expressed interferon alpha (2a or 2b). a, e (independently selected) = 0 or 1; b, c, d, f, g = 0.

```
    Galactosyltransferase, UDP-Gal
    CMP-SA-PEG, ST3Gal1
```

a, c, d, e (independently selected) = 0 or 1; b, f, g = 0; R = PEG.

# FIG. 28Q

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E. coli expressed IF-alpha (2a or 2b). a-g=0.

GalNAc Transferase,
 UDP-GalNAc-PEG

a-c, f, g = 0; d, e = 1; R = PEG.

# **FIG. 28R**

NSO expressed IF-alpha (2a or 2b). a (independently selected) = 0 or 1; e = 1; b, c, d, f, g = 0

1. CMP-SA-levulinate, ST3Gal1 2. H<sub>4</sub>N<sub>2</sub>-PEG

a, c, d (independently selected) = 0 or 1; e = 1; b, f, g = 0; R = PEG.

### FIG. 28S

E. coli expressed IF-alpha (2a or 2b). a-g=0.

 Endo-N-acetylgalatosamidase (synthetic enzyme),
 PEG-Gal-GalNAc-F

a, d, e = 1; b, c, f, g = 0; R = PEG.

# FIG. 28T

E. coli expressed IF-alpha (2a or 2b). a-g=0.

GalNAc Transferase, UDP-GalNAc
 sialyltransferase, CMP-SA-PEG

b, d = 0 or 1; e = 1; a, c, f, g = 0; R = PEG.

FIG. 28U

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```
CHO, BHK, 293 cells, Vero expressed IF-alpha (2a or 2b). a-c, f (independently selected) = 0 or 1; e=1;\ d,g=0
```

Sialidase
 CMP-SA-PEG, ST3Gal1 and ST3Gal3

a-d, f, g (independently selected) = 0 or 1; e = 1; R = PEG.

### FIG. 28V

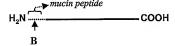
```
CHO, BHK, 293 cells, Vero expressed IF-alpha (2a or 2b). a-c, f (independently selected) = 0 or 1; e=1; d, g=0
```

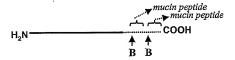
```
1. Sialidase
2. CMP-SA-linker-SA-CMP,
,ST3Gal1
3. ST3Gal3, transferrin
```

a-d, f (independently selected) = 0 or 1; e=1; R=transferrin; g=0.

# FIG. 28W







a-c, e (independently selected) = 0 or 1; d=0; R = polymer, glycoconjugate.

FIG. 28X

# 79/345

CHO, BHK, 293 cells, Vero expressed interferon alpha-mucin fusion protein. a-c, e (independently selected) = 0 or 1; d=0

- 1. Sialidase
- 2. CMP-SA-PEG, ST3Gal1

a-d, e (independently selected) = 0 or 1; R = PEG.

# FIG. 28Y

Insect cell expressed interferon alpha-mucin fusion protein.

a, e (independently selected) = 0 or 1; b. c. d = 0.

1. Galactosyltransferase, UDP-Gal-PEG

a, d, e (independently selected) = 0 or 1; b, c = 0; R = PEG.

# FIG. 28Z

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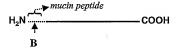
E. coli expressed interferon alpha-mucin fusion protein.

a-e = 0.

- GalNAc Transferase, UDP-GalNAc
   CMP-SA-PEG, sialyltransferase
- c, d, e (independently selected) = 0 or 1; a, b = 0; R = PEG.

FIG. 28AA





a-c, e (independently selected) = 0 or 1; d = 0; R = polymer, linker.

FIG. 28BB

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E. coli expressed interferon alpha-mucin fusion protein.

a-e, n=0.

 GalNAc Transferase, UDP-GalNAc-PEG

d, e (independently selected) = 0 or 1; a-c, n = 0; R = PEG.

# FIG. 28CC

E. coli expressed interferon alpha-mucin fusion protein.

a-e, n = 0.

GalNAc Transferase,
 UDP-GalNAc-linker-SA-CMP

2. ST3Gal3, asialo-transferrin

3. CMP-SA, ST3Gal3

d, e (independently selected) = 0 or 1; a-c, n = 0; R = linker-transferrin.

### FIG. 28DD

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E. coli expressed Interferon alpha (no fusion). a-e, n=0.

1. NHS-CO-linker-SA-CMP 2. ST3Gal3, transferrin

a-e=0; n=1; R'=linker-transferrin.

FIG. 28EE